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Jaundice

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TO CO-ORDINATE and simplify the subject of jaundice is imperative so that with the diagnostic armamentarium at hand a diagnosis may be readily reached and proper therapy instituted. An understanding of the pathologic physiology results in a more rapid and accurate diagnosis and it is with this in mind that the subject is presented.

Physiology

The normal erythrocyte eventually terminates its existence by being broken down in the spleen, where the disintegrated red cell is divided into an iron-containing part (hemosiderin) and an iron-free part (hematoidin). The iron-free part is the precursor or mother substance of the main bile pigment called bilirubin. As the iron-free part of a broken down red corpuscle is delivered from the spleen to the general circulation it comes in contact with the reticuloendothelial system, which is a specialized network of cells arranged around the vascular system. These cells have the ability of converting the iron free part of the red cell into bilirubin. This bilirubin is attached to a heavy protein molecule, hence it is designated as bilirubin proteinate, in which form it is delivered to the liver. The liver splits the bilirubin proteinate and excretes pure bilirubin via the hepatic duct into the gallbladder. When the gallbladder contracts, bilirubin is delivered

into the intestinal tract, where it is acted on and broken down by bacteria to its end metabolite known as urobilinogen (urobilin). Some of this urobilinogen passes out and colors the feces; the remainder is absorbed from the intestinal tract and is carried back to the liver via the portal system. One of the many functions of the liver is to reconvert the end product urobilinogen back to its early predecessor, bilirubin.

Clinical Classification

A classification which has served well is one which divides jaundice into the following types: (1) prehepatic, (2) intrahepatic and (3) posthepatic. With this classification one can place the lesion as to its location before the liver, in the liver or after the liver.

Prehepatic Jaundice.—A typical example of icterus which develops from a prehepatic lesion is familial hemolytic icterus. In this condition the red cells are apparently defective and, instead of being the usual normal biconcave disks, appear as "golf ball" red cells. Since they are also smaller than the normal cells the condition has been referred to as microcytic spherocytosis. These cells have an increased fragility and rupture easily. As a result of this exaggerated bursting process, an excessive amount of iron-free pigment is excreted by the spleen, resulting in an excessive amount of bilirubin proteinate, which is formed by the reticuloendothelial system. This results in jaundice, because of hyperbilirubinemia. However, since this bilirubin is in the form of a proteinate and since this molecule is too heavy to pass through the kidney, the urine does not show the color that one would expect in the jaundiced patient (acholuric jaundice). Since an increased amount of bilirubin is being delivered to the liver, a greater amount of bilirubin is excreted

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JUNE, 1953

597

into the intestines; this results in an increased formation of urobilinogen in the intestinal tract. Not only is this large amount of urobilinogen excreted in the feces, but the remainder is returned to the liver. The liver converts as much of this as it can into bilirubin, but the remainder overflows into the urine, resulting in an increased urobilinuria. Should the Ehrlich aldehyde test for urobilinogen be applied to such a urine, the result would be strongly positive; however, results of liver function tests would be negative. The van den Bergh test is of some value here, since a prehepatic jaundice gives a positive indirect and negative direct reaction.

Other examples of prehepatic jaundice are icterus neonatorum and hypersplenism. In the former, too many red blood cells are destroyed, and in the latter the spleen is hyperactive.

Intrahepatic Jaundice.—Although this type is located in the liver, it is important to remember that the entire liver does not become involved at once; death would promptly ensue if this were to occur. Any toxin, be it chemical or bacterial, or any organism may so injure the liver that one or more of its important functions might be interfered with. Typical examples would range anywhere from a viral hepatitis to a fulminating acute yellow atrophy. When the liver is damaged, one or more of the liver function tests show signs of hepatic dysfunction. Many workers in this field have their favorite liver function test or group of tests; for practical purposes the author prefers to confine himself to the aldehyde test for urobilinogen and the cephalin flocculation test of Hanger. If the lesion producing the jaundice is intrahepatic, then both of these tests elicit positive reactions.

Posthepatic Jaundice.—In jaundice caused by a posthepatic lesion it is assumed that the prehepatic and intrahepatic functions are progressing normally. Examples of posthepatic jaundice are: stones in the common duct, carcinoma of the common and hepatic ducts, carcinoma of the head of the pancreas and metastases to the porta hepatis.

The obstruction to the flow of bile into the intestinal tract may be partial or complete. If the obstruction is partial, then some bilirubin gets into the intestinal tract and this is converted to urobilinogen. That urobilinogen which returns to the

liver will be converted back to bilirubin, since the lesion is not an intrahepatic one, and the aldehyde reaction for urobilinogen will be negative. If, on the other hand, the obstruction to the outflow of bile is complete then no bilirubin gets into the intestinal tract and no urobilin is formed; therefore, the aldehyde reaction will again be negative. Liver function tests in posthepatic jaundice reveal normal functioning livers unless the jaundice has been present well over a month and is of a severe degree; a biliary cirrhosis then forms.

Diagnosis

In evaluating the diagnostic possibilities in each case of jaundice nothing can replace the recording of a careful and accurate history. A detailed and keen physical examination is equally revealing. A large gallbladder in the absence of jaundice usually suggests a cystic duct obstruction (mucocele of the gallbladder); a small gallbladder plus jaundice usually indicates a stone in the common duct, and, finally, jaundice in the presence of a large gallbladder indicates a carcinoma of the head of the pancreas (Courvoisier's law). One can also differentiate the various sites of carcinoma which involve the biliary tract. For example, in carcinoma of the gallbladder, jaundice is not present but a hard nodular mass which moves with respiration is palpable in the right upper abdominal quadrant; in carcinoma of the common duct, jaundice plus a portal vein complex (ascites, dilated esophageal varices, hemorrhoids) is present; carcinoma of the ampulla of Vater is suspected when one finds jaundice plus signs of pancreatic insufficiency, and, finally, carcinoma of the head of the pancreas can be diagnosed when jaundice plus an inferior vena cava complex (bilateral dependent edema and dilated veins of both inferior extremities) are noted.

The differentiation between a stone and a carcinoma of the common duct may not be too difficult; however, it should be remembered that, in contradistinction to the usual conception, a carcinoma may produce colic and a stone may be silent. Taking an icterus index on five successive days might clarify the diagnosis. If the lesion is a carcinoma, the icterus index is high and continues to rise; however, it is possible for an icterus index to drop if there is some slight ball-valve action in the presence of a stone.

Unfortunately pruritus (itching) is considered to be a symptom of jaundice; this is erroneous.

Pruritus is a symptom of posthepatic (obstructive) jaundice. When the patient's primary complaint is his itching, then he is probably suffering from either a stone or a carcinoma which is involving the extrahepatic biliary passages. Rarely does a patient with intrahepatic jaundice complain of itching.

The pulse is usually slow in cases of icterus. A bradycardia is preferred in such cases, because when the pulse becomes rapid it usually forebodes an oncoming acute yellow atrophy or hepatic decompensation.

Of the numerous laboratory tests at one's disposal, the author prefers the Ehrlich aldehyde test for urobilinogen and the cephalin flocculation test. If the lesion is a prehepatic one, the urobilinogen reaction is positive and the reaction to liver function tests are negative; if the lesion is posthepatic, both of these results are negative. No tests are foolproof; however, the statements just made are found to be true in the vast majority of cases.

It seems to be a waste of time, effort and money to do a Graham-Cole test in jaundiced patients. The negative response found in these patients is most misleading. On the other hand, a flat roentgenogram of the abdomen is always taken. Just a few of the tests available to the clinician have been discussed; however, one should always keep in mind that, since no test is foolproof, diagnostic pitfalls are always present.

Treatment

To classify and discuss the treatment of jaundice under the headings of medical and surgical jaundice seems both impractical and misleading. When a patient with jaundice is seen one never knows whether the condition will eventually require a medical or a surgical regimen, and since the two types of therapy overlap, it seems preferable to consider them together. Only the salient parts in the therapy will be mentioned.

Preoperative care is a major factor if a jaundiced patient is to be brought through a surgical procedure successfully. Some of the necessary essentials include electrolyte, water and protein balance; vitamin therapy, especially vitamins K, B and C, and an adequate glycogen supply to the liver. The severe pruritus which may be associated with jaundice can sap much of the patient's strength and energy. Recently the author has used intravenous injections of procaine hydrochloride in a 0.1 per cent concentration and has

found that this gives rather rapid, pronounced relief from itching in most instances. One thousand cubic centimeters of this solution is given at a rate never exceeding 1,000 cc. in one hour. A word of caution, however, should be mentioned; since the drug is a convulsant, its use in concentrated solutions or rapid injection of dilute solutions may produce irreparable damage. Blood transfusions should be utilized not only as an operative or postoperative measure but also as a method of supplying many of the previously mentioned needs. Preoperative laboratory tests, such as blood cell counts, determinations of icterus indexes, prothrombin, bleeding and coagulating times, blood protein determinations, computing of albumin-globulin ratio and others, are all of value. However, none of these replace the clinical impression gained by the seasoned diagnostician as he watches his patient through this "build-up" period.

Many operative procedures, both curative and palliative, have been described for the jaundiced patient; the type of lesion determines the type of operation. Since metastases do not determine operability or inoperability, the only determining factor is fixation of the primary growth to surrounding vital structures. If the primary lesion is not fixed to a vital structure, even in the presence of operable metastases, we feel that Brunschwig's idea in attempting to remove as much of the malignant tissue as is possible is a valid one. Alexander has further stressed this point by suggesting the removal of solitary pulmonary metastases. The monumental work of Whipple in carcinoma of the pancreas has brought those conditions which were considered inoperable only a few years ago into the realm of operability.

To discuss the surgical therapy of the common duct one must be conversant with the surgical anatomy of this structure. It is simple and practical to consider the common duct as being divided into four parts, each being related to the duodenum. Therefore, the common duct is divided as follows: part one, supraduodenal portion; part two, retroduodenal portion; part three, infra-duodenal portion (pancreatic); part four, intra-duodenal portion.

Regardless of where the stone is located, only part one is immediately accessible to the surgeon; therefore, the incision is placed here. A stone in either part one or part two is usually easy to remove by means of a supraduodenal choledochostomy. The author prefers to drain the common

duct rather than to close it, because in the presence of edema and infection one never knows when a suture might cut through. A stone located in part three causes no concern if it is not embedded in the duct wall. If the stone is freely movable, it can be dislocated into part one through a supracholedochal incision. However, if the stone has become firmly fixed in an ulcerated and edematous part of the duct wall, it cannot be dislodged. Some surgeons advocate mobilization of the duodenum to remove such a stone. Since this part of the common duct passes through the head of the pancreas and not between the pancreas and duodenum and since this area is surrounded by a cage of vessels (superior and inferior pancreaticoduodenal arteries), this maneuver seems impractical and at times is impossible. It is of value only when the stone has eroded through the duct and the head of the pancreas; this is unusual. A preferable method to handle such impacted stones in part three is the following one: The flat roentgenogram which must be in the operating room is studied; it is noted that this is a flat film, and no dye has been given. If the stone is not seen on this flat roentgenogram, it is concluded that it is a cholesterol stone. If such is the case then a catheter, not a T-tube, is placed from part one of the duct downward to the stone; this is sutured into the common duct. In twenty-four to forty-eight hours, a few drops of ether are injected into this catheter every morning and every evening. Since cholesterol is soluble in ether, most of these stones will dissolve and disappear without further manipulation. If, on the other hand, the impacted stone in part three is seen on the flat roentgenogram, it is concluded that it is high in calcium content, and this usually is not affected by the etherization method of treatment. In such an instance a short-circuiting operation is done to relieve the jaundice, which, after all, is of far greater and immediate importance than the presence of a stone. The procedure preferred is a cholecystojejunostomy. This brings up the necessity of determining whether or not the common duct should be explored. Such a decision must be made prior to performance of a cholecystectomy, since if the gallbladder is removed and then one finds it necessary to do a short-circuiting procedure it usually is more difficult to do a choledochojejunostomy than to do a cholecystojejunostomy. The indications for exploring the common duct are too well known to warrant repetition here. If

an indication is present, the common duct is explored, the necessary procedure carried out and the gallbladder removed if there is no need for its utilization in an anastomotic procedure. A stone in part four is also approached through an incision in part one. Occasionally such a stone will dilate the ampulla of Vater, and then it can be pushed into the duodenum. If this is impossible, the middle of the descending portion of the duodenum is opened and the stone is extracted transduodenally. The duodenum is then closed.

Drains in the common duct can be removed when one is certain that bile is flowing freely into the duodenum. This can be determined by means of roentgenography with a contrast medium, tying off the tube or inspecting the color of the feces. Although common duct tubes have been removed anywhere from a few days to many months postoperatively, the author is of the opinion that the average common duct tube should be removed somewhere within a two and four week period.

There are cases in which it is impossible to determine preoperatively whether the condition is due to a stone or to a neoplasm and whether or not the latter is operable. Although some conditions might appear inoperable preoperatively, the patient should not be denied at least the chance of an exploratory operation. Occasionally a life can be saved by removing a stone which was thought to be a neoplasm or by removing a neoplasm which was thought to be nonresectable.

The postoperative management is as vital to a successful result as is the operative procedure itself. This part of the treatment is not relegated to the uninitiated but is preferably handled by some one thoroughly conversant with the modern approach to this all-important phase of therapy.

Summary

To thoroughly understand the subject of jaundice both diagnostically and therapeutically the pathologic physiology of the metabolism of the bile pigments must be clarified.

Classifying jaundice into three groups, namely, prehepatic, intrahepatic and posthepatic, has been advantageous clinically.

To standardize the various procedures applied to common duct surgery the common duct is divided into supraduodenal, retroduodenal, infraduodenal and intraduodenal portions.

Recurrent Acute Intussusception

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INTUSSUSCEPTION is the most frequent and the most important acute abdominal emergency encountered in infants from three to eleven months of age," according to Ferrer.² While acute intussusception in infants is not infrequent, recurrent acute intussusception is rare. Gross and Ware⁴ reporting on, "Experience from 610 cases," did not mention recurrent acute intussusception. Gibson, Dockerty and Dixon³ reported fifty-five patients with acute intussusception with one recurrence. Snyder and Kraus⁷ found one known recurrence among 143 consecutive cases occurring in infants and children. Oberhelman and Condon⁵ found that three patients out of a series of ninety-five had recurrent acute intussusception. They⁵ state: "In one patient the first intussusception was reduced by a barium enema, but recurred one week later at which time reduction was made by operation. In the second patient the first intussusception was reduced by operation and at the same time an appendectomy was performed. Four days later the second intussusception occurred, and, at surgery, the invaginated appendiceal stump was found to be the apex of the intussusception. In the third patient the first intussusception was reduced surgically. Six months later a recurrence developed which was reduced by a barium enema.

"Three weeks later a second recurrence developed which was then reduced surgically. At this time a Meckel's diverticulum was found. This was probably the cause of the recurrence in the third patient." While the majority of incidences of acute intussusception occur in healthy males under two years of age it may occur in either sex at any age. The etiology of intussusception in infants is not known whereas in adults it is usually due to a tumor, Meckel's diverticulum or an ulcer. Of vital importance is the early diagnosis of the disease before irreducibility and strangulation of the intussusception develop. This is shown by Gross and Ware⁴ in Table I.

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TABLE I. RELATION BETWEEN MORTALITY AND DURATION OF SYMPTOMS

Duration of Symptoms Hours	Mortality	
	1928-1939	1940-1947
Less than 24 hours	0%	0%
24-36 hours	23	9
36-48 hours	33	13
48-72 hours	21	15
72-96 hours	38	15

A few workers⁶ have reported good results in the reduction of acute intussusception by means of barium enema. A certain number of the patients so treated will require supplemental surgery in order to complete the reduction. Surgical intervention, however, is generally accepted as the treatment of choice. The head of the intussusception is milked backward along the colon until the mass can be delivered outside the abdomen where the reduction can be completed under visual control. In those cases which have become irreducible or gangrene has supervened the aseptic, Mikulicz resection as recommended by Gross and Ware⁴ is probably the safest procedure although resection and primary anastomosis, in the hands of experts,¹ reportedly gives excellent results.

Case Report

First Hospitalization.—A nine-month-old white male infant was brought to the hospital at 10 p.m., October 13, 1951. The mother stated that at approximately 4:30 p.m., October 12, 1951, the infant began having attacks of screaming which appeared to be due to abdominal pain. With each attack he would be "doubled up" with pain, but after a minute or so the attacks subsided and he appeared normal. These attacks continued intermittently through the night.

Vomiting developed during the evening and since then he had not been able to retain anything. Blood streaked stools were passed the morning of admission (October 13, 1951). The past history was negative. The child had never been sick before.

Physical examination revealed a normal appearing, well-developed, well-nourished infant. Rectal temperature was 99°F., pulse 120, and respirations 26. His skin was flushed and dry. The superficial lymph nodes were not enlarged. The head was symmetrical with no deformity. The eyes appeared to be normal. The ear drums were clear, gray and glistening. The nose presented no discharge, deformity or obstruction. The lips and mouth presented no lesions. The tonsils were small and the pharynx was clear. The neck presented no masses, tenderness or rigidity. The chest was normal in size and shape. The lungs were resonant throughout with vesicular respiration; no râles, rubs or wheezes were heard. The heart had a regular rhythm with no enlargement or murmurs.

During a one hour period of observation the patient had four attacks characterized by screaming, partial

RECURRENT ACUTE INTUSSUSCEPTION—SUMMERS

flexion of the trunk and rigidity of the abdominal wall. With the abrupt cessation of the attack he would fall asleep, the abdominal wall relaxed, and a definite mass in the right upper abdominal quadrant could easily be palpated.

The genitalia were normal. Rectal examination revealed no mass. An enema was returned blood streaked. The extremities were normal.

A diagnosis of ileocolic intussusception was made and immediate operation advised.

Preoperative Preparation.—An infusion of 5 per cent dextrose in physiological saline was started in the left great saphenous vein above the ankle. Atropine, gr. 1/400, was given hypodermically.

Operation.—The operation began at 2:10 p.m., and ended at 3:30 p.m., October 13, 1951. Open drop ether anesthesia was used.

The abdomen was entered through a long right paramedian incision, the right rectus muscle being retracted laterally. Exploration of the abdomen showed that the terminal ileum, vermiform appendix, the cecum and the first part of the right colon constituted the intussusceptum; the right colon and the transverse colon constituted the intussusciptens. The head of the intussusceptum had progressed to the splenic flexure of the colon. The first part of the reduction was performed intra-abdominally by milking the head of the intussusceptum backwards. The reduction of the terminal part was accomplished under visual control.

The cecum, appendix and terminal ileum were dark in color and edematous; healthy color returned to the bowel after warm packs were applied for a few minutes. The vermiform appendix appeared congested and edematous, so it was removed. The mesenteric lymph glands were markedly enlarged. One of these glands was removed for microscopic examination. Careful palpation of the terminal ileum, cecum and ascending colon revealed no tumor, Meckel's diverticulum or ulcer. The abdomen was closed in layers using a continuous suture of No. 0 chromic catgut on the peritoneum and posterior rectus sheath and interrupted No. 4-0 cotton sutures on the anterior rectus sheath and skin. The patient withstood the procedure well and was returned to bed in good condition.

Pathologist Report.—This report revealed the following: F-2684, lymph node, acute inflammatory hyperplasia and marked passive hyperemia; F-2694, a juvenile appendix.

Postoperative Course.—The postoperative course was remarkably smooth. There was no further vomiting. Milk and fluids were resumed the first postoperative day. On Oct. 20, 1952, the skin sutures were removed and the patient discharged to return for follow-up studies.

Final diagnosis was: Acute ileocolic intussusception.

The patient was examined at intervals after discharge from the hospital. Growth and development proceeded normally and no further complaints were noted.

Second Hospitalization.—The mother stated that the child had been perfectly well until the morning of April 21, 1952, when it was noted that he appeared ill; he began having paroxysmal attacks of abdominal pain similar to his previous illness. Vomiting occurred and he was unable to retain fluids or food. Several blood streaked stools were passed.

Physical Examination.—Rectal temperature was 103° F., pulse 120, and respirations 24.

The patient, a sixteen-month-old-boy, was well developed and well nourished but appeared slightly dehydrated. He was drowsy and slept quietly. Complete examination was negative except for the abdomen. He was observed over a forty-five minute period. During this interval he had five attacks characterized by screaming, partial flexion of the trunk and marked rigidity of the abdominal wall. An attack lasted approximately two minutes and subsided abruptly whereupon he fell asleep.

During sleep the child was relaxed, the abdominal wall was soft and a mass in the right upper abdominal quadrant was easily felt. An enema was returned blood streaked. The diagnosis of recurrent acute ileocolic intussusception was made and immediate operation advised. An infusion of 5 per cent dextrose in physiological saline, intravenously, was started. Atropine, gr. 1/300, hypodermically, was given.

Operation.—Operation began at 12:20 a.m., and ended at 1:00 a.m., April 22, 1952. Open drop ether anesthesia was used.

The incision was a right paramedian one through the previous operative scar. The right rectus abdominis muscle was retracted laterally and the abdomen entered. Exploration revealed an ileocolic intussusception with the head of the intussusceptum in the transverse colon. It was gently reduced by exerting pressure on the head of the intussusceptum thus milking it backward. The reduced intussusception was not strangulated but the terminal ileum and cecum were edematous and congested. Careful palpation of the terminal ileum, cecum and colon failed to reveal tumor, diverticulum or ulcer.

The abdomen was closed in layers using a continuous suture of No. 0 chromic catgut on the peritoneum and posterior rectus sheath. No. 4-0 cotton, interrupted suture, was used on the anterior rectus sheath and the skin.

The postoperative course was uneventful. The temperature returned to normal after forty-eight hours. There was no further vomiting and normal feeding was resumed. He was discharged on the fifth postoperative day (April 26, 1952) and returned for removal of skin sutures on April 29, 1952. His subsequent course has been normal.

Conclusion

Acute intussusception must be diagnosed early and treatment instituted. Children under two

(Continued on Page 625)

Psychodynamic Aspects of Peptic Ulcer

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THE ASSOCIATION of peptic ulcer symptoms with periods of emotional stress was recognized by discerning clinicians long before the concept of psychosomatic medicine evolved. It is well established here that emotion interferes with normal digestive processes. Beaumont observed in his classic study that fear and anger were among the factors associated with inhibition of gastric secretion. Hornberg, Bogen, and Schrottenbach reported diminution in gastric secretion as a result of anger or vexation, with each of these authors performing his experiments on subjects with gastric fistulas. Heyer showed that a brief period of emotion, euphoric or dysphoric, produced in hypnotized volunteers by suggestion (i.e., talking about war experience, choking, railroad accident, winning a lottery, et cetera), resulted in a reduction of the secretory response to suggested food. Wittkower's observations can be summarized as follows: (1) similar effective stimulations in a given subject cause similar changes, (2) similar emotions cause various changes in different subjects, (3) various emotions cause similar changes in the same subject. There are certain individuals who react with increased acidity regardless of emotional state, while in other subjects the changes are manifested in the volume, without alteration of the acidity.

Until comparatively recent times, it has been maintained that peptic ulcer is particularly susceptible to aggravation by emotional disturbances. Bergman proposed in 1933 the theory that peptic ulcer is caused by an imbalance of the autonomic nervous system. The effects of this imbalance are manifested in the stomach by spasm, ischemia, damage to the mucous membrane, and peptic digestion of the devitalized area. The resulting acute lesion initiates further spasm, thus establish-

ing a vicious cycle which leads to a chronic ulcer. In brief, we have moved through the period when psychic trauma was considered to affect adversely an existing ulcer to the present-day concept that psychic disturbances cause peptic ulcer. The first formulation as to the common denominator of emotional status of peptic ulcer patients was suggested by Draper's work in 1927 as to the relationship of "chronic fear" in the production of the psychic pattern in peptic ulcer. He observed that there was evidence in the psychological as well as in the morphological panel of ulcer patients that maleness was the essential feature. These observations were considered to be consistent with the fact that the incidence of peptic ulcer is much higher in males. Draper, who was influenced by Crile's report on the relation of hyperthyroidism in peptic ulcer, stated that it was commonly known that exophthalmic goiter and hyperthyroidism are from six to eight times more frequent in women than in men, and that in view of these considerations it would appear paradoxical that more men than women should be affected with ulcer. The only explanation for this paradox seemed to be in the fact of femaleness within the male. Draper continued with the statement, "A man who possesses that degree of femaleness which threatens the authenticity of his essential maleness becomes subjected to deeprooted, unconscious fears lest he fail in his attempt to play successfully the masculine role in life." It appeared that unconscious awareness of the feminine component might be a stimulus to the over-exploitation of their virility which is so characteristic of ulcer bearers. Draper concluded with his views concerning "the persistent hold on mother principle and fear of loss of mother surrogate's approval," which appeared to be the most consistent source of fear in the group he studied. It was believed that when one read the intimate histories of persons who had ulcers, "the impression developed that these individuals, like frightened neglected children, are striving continually to recapture and maintain the mother principle which had ministered so meticulously to the demands of that delicate infant receptacle for milk." So, "fear," "fright," "frightened" are the words recurring throughout Draper's discussion of the psychic status of peptic ulcer patients.

The painstaking investigations of Todd on the physiology of the human stomach are significant as the turning point in the concept of the effects

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of emotion on gastric motility. Extensive radiographic observations on medical students enabled Todd to discern characteristic motility patterns for various affective states. He showed that sudden or transient dysphorias, such as mental shock, acute disappointment, fear or depressing emotional strain, are accompanied by decreases in gastric tonus and weak or absent peristalsis. On the other hand, he showed that in the anxiety complex the stomach always manifested hyperactivity. He stated that since there was no distinction in pattern between this hyperactivity and that which precedes pyloric or duodenal ulcer, precautions should be taken to determine its transient or quasipermanent form. McGregor stated in 1938 that there was enough evidence to show that gastric peristalsis and secretion are arrested in man not only by worry, anxiety, fright, fear, and the major affective states, but also by much finer shades of feeling.

One of the approaches regarding the relationship between hypersecretion and peptic ulcer in experimental animals was based on Pavlov's demonstration that if a pain stimulus be associated with the giving of food, the usual inhibitory effect of the pain on salivary secretion eventually disappears, and the pain stimulus may even become a conditioned excitator of salivary secretions. Pavlov's interpretation of this phenomenon was that there was a transference or alternation of direction, and an attraction of energy from one center to another. This is not essentially different from the dynamic interpretation of the psychic origin of somatic symptoms, namely, that repressed emotional energy flows into the vegetative centers. The physiological anatomy on which the concept of psychogenic stimulation of gastric secretion is based warrants consideration. It is an established fact that the vagus nerve carries excito-secretory impulses to the fundic glands of the stomach. It has been tacitly assumed that the stimulation of gastric activity by emotional states also utilizes the vagal pathway. (The work of Claude Bernard, Cushing of posterior fossa lesions, Fulton's neurophysiological studies on extirpation of the frontal lobes, can be quoted.) Presuming that the vagi are the nervous route for the transmission of these effects, we may now ask, how can affective states produce vagal stimulation? The excitation of the autonomic nervous system which characteristically accompanies emotional reactions is considered to be due to stimulation of autonomic centers located

in the hypothalamus. The hypothalamic centers are under the control of higher centers in the thalamus and cortex. Thus, in the case of psychogenic stimulation of gastric secretion under conditions of emotional stress, it may be presumed that the parasympathetic centers in the hypothalamus are activated by impulses controlled by the thalamus and cortex. The stimulation of gastric secretion by emotional states acting over the vagal pathway has often been termed a type of "psychic secretion." Ivy proposed that the term "cephalic" phase of gastric secretion be used to designate the secretion which occurred in response to stimuli acting subcortically. As has been illustrated, gastric secretion can occur in response to sham-feeding in the absence of the cortex.

Alexander pointed out that studies by internists and physiologists fall short of an accurate evaluation of the deeper psychological forces obtained in a given patient. The psychosomatic theory of the etiology of peptic ulcer is based on three main premises: (1) That most ulcer patients manifest a characteristic personality pattern or conflict-situation; (2) that this emotional status is accompanied by hypersecretion and hypermotility of the stomach; and (3) that hyperactivity of the stomach leads to peptic ulcer. Alexander formulated a definite hypothesis regarding the basic psychological personality problems in peptic ulcer patients. In brief, the essentials of the three assumptions which have to do with repressed oral-receptive tendencies are that, first, the psychic factors causative of the somatic disturbance are of a specific nature; secondly, that conscious psychological processes play a subordinate role in the causation of somatic symptoms, since such conscious emotions and tendencies can be freely expressed and relieved from the voluntary nervous system; and thirdly, that the patient's actual life situation has usually only a precipitating influence on the disturbance. It was therefore assumed that there was to be sought in these patients not a distinctive personality pattern, but rather a typical conflict-situation, and the aim of Alexander's study was to identify this conflict. However, clinical observation has shown repeatedly that in many peptic ulcer patients the outward appearance of self-control is carefully maintained. Alexander stated further that although certain personality types might be more likely to become involved in this conflict-situation, he has observed that under appropriate circumstances other types of character may develop the

same conflict. Mittelman and Wolf found a wide range of personality types in thirty patients. However, all shared a common characteristic reaction pattern which consisted of intense anxiety, insecurity, resentment, guilt and frustration.

The most obvious feature of the pathological physiology of peptic ulcer is hyperactivity of the stomach in both its motor and secretory functions. The hyperactivity can and does accompany emotional states or conflict-situations, and the relationship can be envisioned as follows: "If the intense wish to receive, to be loved, to depend upon others, is rejected by the adult ego and consequently cannot find gratification in normal life relations, then only the regressive pathway remains open; the wish to be loved becomes converted into the wish to be fed. The repressed longing to receive love and help mobilizes the innervations of the stomach, which are since the beginning of the extra-uterine life closely associated with the most primordial form of receiving something, namely, with the process of receiving food. These innervations serve as a chronic stimulus of the stomach and are independent of the normal organically conditioned stimulus, namely; the need of food: this stimulus has its origin in emotional conflicts entirely independent of the physiologic state of hunger. Those individuals who on account of the described conflict-situation have to repress and abnegate their overstrung receptive cravings express them in the tacit physiological language of the stomach functions. Such a stomach behaves all the time as if it were taking or were about to take in food." It has been suggested that an excessive secretion of the stomach under stress may be a manifestation of an attempt to resolve hostility and to gain security through eating. These hypotheses imply that certain displeasurable affective states cause an augmentation of gastric activity—a change hitherto considered to be associated only with pleasurable feelings. There is extensive literature regarding observations as to secretion or motility, or both, under conditions of emotional stress in both animals and man. Contrary to the findings in the gastric fistula case of the patient named Tom reported by Wolff, in animals it was found that the only effect of dysphoric emotional states on gastric functions was inhibition, regardless as to whether or not the emotion was one of fear, anger, or frustration, with the effects being the same—namely, a decrease in glandular and muscular activity of the stomach.

Since it was believed that the whole problem lies not in personality types, but in the nature of the specific emotional conflict, individuals with a specific personality type probably tend toward similar emotional conflicts. However, in this research an attempt was made to determine the specific emotional conflicts residing in the fundamental personality type, with an attempt to ascertain the emotional undercurrents and to measure the precipitating factors in physiological units. Since the environmental setting seems to show a relationship with the conflict-situation, our study included a sociological evaluation, as did Ivy's.

Ivy and his co-workers reported in their recent volume on peptic ulcer that this condition was found more commonly in certain occupations than in others, and was related to irregular living habits or prolonged or chronic nervous tension, anxiety and fatigue. The statistics used by Ivy show that death from peptic ulcer reached their peak in the midwinter and were lowest in August. Among the chronic diseases of the United States in 1937, peptic ulcer ranked tenth as the cause of death, twelfth as the cause of lost work days, fourteenth as to cause of invalidism, and twentieth as to number of cases. The incidence in the Army of the United States during World War II was 0.3 per cent. The mortality from the disease is relatively low, since it has accounted for only 0.68 per cent of the deaths in the United States since 1936. Less than 5 per cent of the peptic ulcer patients die from a complication of the disease, such as perforation, and the mortality is probably less since the advent of antibiotics and sulfonamides. Since World War II, the clinical and mortality statistics show that an increase in the incidence of peptic ulcer has occurred throughout the world. Sex as a constitutional factor which affects susceptibility to peptic ulcer is clearly established, with the ratio of four males to one female after ten to fourteen years, and the ratio increasing to eight to one beginning with the second decade. The external environment has been a factor evaluated in the light of the occupation. In England, the incidence of duodenal ulcer and mortality from it were greater among the men in high social classes, with large incomes, and in administrative or professional positions with great responsibilities. The incidence of gastric ulcer and the mortality from it were higher in skilled labourers. Women who took responsible skilled or semi-skilled positions had as high a rate as any group of

men. Salesmen and vehicle drivers who were exposed to nervous tension, with irregular eating habits, had the same incidence as those in the group of administrators. The incidence of ulcer is higher in urban than in rural populations. Difficulties with finances, working conditions or relatives are more frequently an event associated by the patient with the onset of ulcer than with the onset of some other physical disturbance. Exposure to cold and dampness was given by patients as a cause of recurrence. In the United States, the death rate from peptic ulcer is higher among divorced, widowed and single males than among married males. During the period of heavy air-raids over London, the death rate from peptic ulcer increased. There is evidence to show that when a population is exposed to an environmental situation with sustained anxiety, there is an increase in the number of perforations and hemorrhages.

From the physiological point of view, caffeine stimulates gastric secretion in man and acts synergistically with histamine. Like histamine in very large doses, this produces gastric ulcer in cats. Therapeutic applications using histamine are based on the assumption that some fundamental sensitivity exists which can be neutralized by desensitization. In an allergic reaction, histamine is probably not the primary factor involved, but is the biochemical released secondarily into some disruptive process within the cell. Coagulation time is shortened as the result of increased platelet activity in the patients receiving intravenous injections of histamine. Vagotomy decreases gastric secretion and motility, and in most cases achlorhydria will develop as a result of administering histamine, although total acidity may remain unchanged. In the normal individual, an insulin-produced hypoglycemia will cause a sharp rise of both free hydrochloric acid and total volume of gastric secretion. However, if both vagi have been completely severed, this effect will not take place. This test has been used to determine the completeness of bilateral vagotomy. Following vagotomy, most sensations arising in the gastrointestinal tract persist, the appetite is appreciated normally, and sensations of heat and cold—as tested by application of hot or cold water to the stomach—are readily perceived. Following vagotomy, over-distention of the stomach causes the usual feeling of distress, and traction of the stomach following vagotomy by introducing a

gastroscope beyond the usual depth results in pain. The pain pathways are obviously interrupted by vagotomy, since there is immediate and complete relief of ulcer pain. Ivy pointed out the role of hormones in preserving the delicate balance of the digestive tract, suggesting that some hormones both inhibit gastric acidity and influence the protective mucous coating of the stomach and duodenum. Alcohol in 7 per cent concentrations or greater stimulates gastric secretion and irritates the mucous lining; while caffeine irritates an existing ulcer, since it stimulates acid and pepsin secretion. Experimental chronic ulcer heals quickly if not exposed to gastric contents, and healing can be delayed by the injection of histamine which produces angio-toxic changes in the stomach wall. Among other etiological factors are the mechanical ones of experimentally induced pyloric stenosis, also the etiological role of rough food producing ulcer in the vagotomized rabbit—whereas a soft diet reduces the incidence of peptic ulcer by 5 per cent. Vascular disturbances resulting in the impairment of blood supply of the mucosa, without interfering with the secretory function, may result in the formation of an erosion or an acute ulcer. Infection, toxic factors, allergy, nutritional deficiency such as absence of protein in the diet of experimental laboratory animals, acute or subacute adrenal or thyroid-parathyroid insufficiency, and injection of large doses of pituitrin can produce ulcer. The reason for the beneficial effect of pregnancy on ulcers has not been adequately explained. It may have something to do with the decreased secretion of gastric juices. Experimentally, it has been shown that continuous stimulation of the vagi for several minutes to an hour will cause acute lesions in the stomach. There is some evidence to show that ulcer formation may be due to a decrease in the defensive properties of the mucosa rather than the experimentally induced hypersecretion.

The research group consisted of twenty-one patients who were suffering from peptic ulcer. Since this is a small group, the statistical evaluation of the observations was carefully considered. A review of the literature showed that each ulcer study was restricted to groups of available ulcer cases, and hence could not assure the representativeness of the sample. Consequently conclusions concerning the total ulcer population are extremely precarious. Comparisons can be made between the results of different studies, and where the

various results and theory agree some confidence in both the theory and observations is justified. Where the observations are all in agreement, but the observations do not agree with the theory, there is perhaps more ground for doubting the theory than the observation. Where the observations do not agree, there is little ground for knowing which fails, namely theory or observations, or both. Our data were statistically analyzed first for internal comparisons of the twenty-one patients within this project. Second, there was a comparison of the whole sample with general population characteristics; third, comparison of the results of this and other studies; and fourth, comparison of the results on examination of sample records of four thousand patients of Ypsilanti State Hospital, Michigan, with general population characteristics and the results of similar studies.

To summarize both our general impressions as a group and the results of our statistical analysis it was noted that the patients were of average or superior intelligence. In the group was a pair of symmetrical twins, each of whom simultaneously developed a peptic ulcer in addition to a severe topical eczema which alternated in severity with the ulcer. With one exception, all were verbal, articulate, and expressed an eagerness to cooperate in the research. Five patients were referred by others already in the project, and three-fourths expressed the wish to refer other friends. They showed a great need for approval, were obsequious, and frequently asked for reassurance as to whether or not they were "doing all right." It was observed that there was intense rivalry, and they exhibited a low threshold for thwarting. There was a universal fear of rejection, and all had a strongly-motivated humanitarian impulse to look out for the "underdog." In general, they were all "do-gooders." It was striking to note the clarity with which they expressed the belief that emotional conflicts were the basis for their symptoms, and several insisted on psychiatric treatment even against the expressed opinions of their personal physicians. All of them realized that regardless of diet, faithfulness in taking medication and complete co-operation with their personal physicians, symptoms frequently recurred. They also observed that when they were apathetic or depressed the ulcer improved, and that exacerbations did not directly relate to spurts of ambition or over-activity. Family loyalties in general were intense, and four patients admitted not marrying or

marrying very late in order to care for an aged mother. The feeling of never having been successful or completely adequate was uniform in all patients. Two developed speech inhibition in recent years which interfered with their work as public speakers. Intercurrent emotional difficulties were frequent, and several admitted that they felt worse when they had to go home.

According to 1947 census figures, 82 per cent of all the households in the United States containing a person once married, also contains the spouse. That is to say, 18 per cent of the once-married households in the United States had only the husband or the wife present, but not both. Of the households from which our patients came 57 per cent had only one parent. This difference is significant, and indicates that ulcer patients tend more than the normal person to come from broken homes. It has been observed by a number of different research studies that the ulcer patient has a better than average education. The median number of years of school completed by our patients was twelve. According to the 1940 census, the national median of number of years of school completed by persons who have completed their education is 8.4 years. The difference between these medians is significant, and bears out the observation previously mentioned as to the higher educational attainment of ulcer patients.

The average onset age of ulcers in the eight patients who did not come from broken homes is 21.1 years. The average onset age of the thirteen patients who come from broken homes is 30.2 years. This difference is statistically significant, as it appears that those who are deprived of a normal parental relationship can build up greater resistance to the onset of ulcers. It was apparent that almost every one in the group found it necessary to assume responsibilities at an early age, resulting from a broken home, with a premature assumption of financial and emotional responsibilities for siblings at an early date. Since the methods of defense used by the child-ego should be on a level with its chronological age, his ego may have been inappropriate for dealing with these early problems which demanded adult responsibility. The ego structure remained weak in spite of aggressive and overly-determined competitive attitudes. Many admitted they "felt brittle" and were unable to withstand pressure, both internal and external, but had to put on a "bold front."

In six of the thirteen broken homes from which

patients in this study came there was a parental substitute. The average onset age of ulcers among those who came from broken homes and had a parental substitute was 31.4 years. The average onset age of those coming from broken homes without a parental substitute was 28.5 years. There is not a significant statistical difference between these two ages. Hence the study does not indicate that the onset of ulcers depends on whether or not the patient coming from a broken home had a parental substitute.

Of the thirteen ulcer patients who came from broken homes, five suffered their first distress before the break-up of their homes, and seven after the break-up. This is not a statistically significant difference, and hence does not indicate that the age of the first gastric distress depends on the breaking of the home.

In the thirteen patients who came from families containing at least one alcoholic, the average onset age was 26.2 years. In the eight patients who had no alcoholism in their families, the average onset age was 27.4 years, with the difference not being significant. Hence, the onset age of ulcer seemed to be independent of the presence of alcoholism. Our data did not indicate that the age of onset is dependent on the presence of alcoholism in the family. However, a significant relationship between ulcers and alcoholism can be pointed out. In 1946, the Research Council on Problems of Alcohol reported that there were some 750,000 alcoholics in the United States. In that year there were 34,948,666 households in the United States (according to the U. S. census reports). This means that if there were only one alcoholic per household, two out of every one-hundred households (or 2 per cent) in the United States would contain an alcoholic. Since there is frequently more than one alcoholic per household, the actual percentage of households containing alcoholics is less than 2 per cent. In this study, thirteen of the twenty-one patients, namely 62 per cent, came from households containing alcoholics. This percentage is significantly higher than the 2 per cent one would expect on the basis of available statistics, and this indicates that ulcer patients tend to come from households containing alcoholics.

There was not a significant correlation between the age of the first job and the onset age. Although there are no figures available to prove the point, these ulcer patients seem to have taken their first job at an earlier age, in general, than the average

person. The average age at which they took their first job was 13.9 years.

Nine of the patients suffered their first distress before they went to work on their first job, and nine did not suffer distress until after they went to work on their first job. In three cases, the events were simultaneous. This seems to indicate that the age of the first distress was independent of the age at which the patient had to go to work.

In a study by Reusch, he maintained that youngest children in the family had a higher incidence of ulcer. However, our study showed that 36 per cent were the oldest children, and 19 per cent of the cases were the youngest. But these differences, both in Reusch's study and ours, were not statistically significant.

Figures for the incidence of ulcers over the total United States population are very poor. Estimates vary from a conservative 1.5 per cent to 10 per cent, noted by Palmer in Cecil's "Textbook of Medicine," published in 1948. According to 1947 census figures, the average household in the United States contained 3.63 persons. If we take the lowest incidence figure, namely 1.5 per cent, then the frequency of households which would contain two ulcer patients, if ulcer patients were distributed at random throughout the population, would be 2.63 times 1.5 or 3.95 per cent. The fact that 62 per cent of our patients came from households where one or more other persons had ulcers, indicates strongly that ulcer patients are inclined to come from households containing other ulcer patients. Even if we assume that 10 per cent of the total population have ulcers and perform similar computations, the difference between the expected frequency of 26.3 per cent and 62 per cent is significant at the .05 level. Dunbar, at Presbyterian Hospital in New York, noted that 89.2 per cent of her ulcer patients came from households where other ulcers were present, so that her figures accentuate even more than ours the conclusion reached above.

In our sample of ulcer patients, the average number of children per ulcer patient family is 4.5. This figure does not show any significant difference in number from families without ulcer patients. According to "Vital Statistics," Special Reports, Federal Security Agency, Public Health Service (Volume 35, number 17, October, 1950), there was a total of 8,708 deaths caused by ulcers in 1948 in the United States. Thus ulcers caused 0.6 per cent of the total deaths in the United States.

PEPTIC ULCER—SCHWARTZ

Various reports have been given which seem to indicate that the death rate due to ulcers among psychotics is less than that of the normal population. Our interest was aroused by finding two cases which developed evidences of psychosis after the ulcer symptoms subsided. Gregg reported that among 600,000 deaths reported in a community and 26,000 deaths reported in Massachusetts State Hospitals, gastric and duodenal ulcers were reported as the cause of death in the community with a relative frequency three times as great as in State hospitals. Rosenbliett and Manley reported in 1940 that there was only one out of 300 deaths reported from the Northampton, Massachusetts State Hospital patients due to ulcer, namely 0.3 per cent. Rathmell and Luber reported in 1943 that autopsies of 420 institutionalized psychotics revealed eight peptic ulcers, that is 1.9 per cent. By combining various statistics that are available as to the incidence of death in the United States and in mental institutions in the United States, the number of deaths in the general population due to peptic ulcer, and the peptic ulcer deaths in mental hospitals, we find the figure of 0.31 per cent of all deaths in mental institutions being due to ulcers, while the percentage of ulcer deaths in the general population is more than twice that figure, namely 0.65 per cent. In this connection, we examined the death certificates of 1,967 patients at the Ypsilanti State Hospital and found five deaths due to ulcer, that is to say .25 per cent. This percentage is significantly different from the national figure of .65 per cent. It seems clear, then, that deaths from ulcers are less apt to occur among inhabitants of mental institutions than among people at large. A summary of the most recent figures obtained from Miss Laurretta H. April, Chief of the Public Inquiries Branch, Division of Public Health Methods, Federal Security Agency, Washington, D. C., denotes that approximately 300,000 cases of peptic ulcer occurred during a year. Of these, 180,000 persons were unable to work or pursue usual activities for short periods of time (that is, a few days); 140,000 were unable to work or pursue usual activities for longer periods, and 70,000 had to be hospitalized. Even permitting a range of 25 per cent error in this estimate one way or another, the seriousness in the economic problem involved in peptic ulcer is obvious.

Many of these patients suffered from constipation and severe bowel difficulties. The in-

cidence of hemorrhoidectomy was high, as were other surgical operations. The incidence of constipation and headaches was great, and the history of other ulcers in the family has been noted. Frequent intercurrent dermatological disorders were noted in the peptic ulcer group. The atopic eczema usually was of a very severe nature, and alternated in severity with the ulcer symptoms. Three male patients developed nausea and vomiting during the periods of their wives' pregnancies. The association of anxiety with peptic ulcer symptoms was universal, appearing during ambivalent feelings involved at the time of making drastic decisions or a radical change of occupation. One patient, who was deeply attached to his mother developed a severe hemorrhage during the study period when he could not make up his mind to marry the girl his mother thought was "not good enough" for him. The second patient developed a severe hemorrhage in the course of the research when his father refused to fulfill an obligation incurred years ago, and instead had turned funds over to the twin sibling. This patient admitted that his feeling of futility in the situation produced the hemorrhage. Orality was exhibited by five who showed mannerisms of mouthing fingers and nail-biting. In addition, there were two stutterers.

During the taking of motility tracings and the titration of gastric juice, material was taken from the anamnestic processes to act as emotional stimuli. It was found that the volume flow of gastric acidity and motility were increased in the free association concerning painful historical data. It was apparent that the material dealing with anxiety, and which increased the painful contractions of the stomach, was concerned largely with past internal rather than present external stress. It was impossible to differentiate the specific and varied categories of emotional responses, such as anxiety or hostility. However, specific experiences could be evaluated in terms of the degree of subjective pain responses incidental to the recalling of early memories and deprivations, loss of love, et cetera, in other words, in physiological units. Such recall often was accompanied by acute gastric distress and pain.

They exhibited unusual pride in material comforts, and admitted concern in possible unforeseen expenses and future contingencies. In general, they were concerned over financial obligations, and unexpected bills seemed to be disturbing. One

patient took a job for less pay for what he called idealistic reasons, and then forced himself and his family to become unnecessarily mercenary in other ways. Their economic status was satisfactory, and each exhibited a sustained work record.

As a rule, the patients were argumentative, feared ridicule, complained of waking up tired and that their work was never finished. All uniformly spoke of a feeling of loneliness. As a group, they were easily irritated, restless, ambitious, and worked hard for long hours in order to do exceptionally well. As a group, all had vivid childhood memories, although there were exceptions, with two complaining as to lack of memory of early childhood. Several had a capacity for dramatic visualization of early childhood experiences. Immaturity was indicated by their need for immediate gratification, and appointments could not be postponed. The phantasy material revealed moralistically-tinged attitudes. Several recalled early childhood dreams of fear of darkness, of having possessions that were not available when they awakened, the father-figure who was big, healthy, and showing great affection, of dangers, castrative women, fear of water, and frequent recurrent dreams of eating and fear of punishment.

The psychodynamic factors as revealed by dream material and phantasies indicated regressive material to a physiological level. Frustration arose primarily from threatened ambition, fear of rejection, and unfavorable sibling rivalry, resulting in compensatory demanding or orally dependent aggressive attitudes. The dream material was preoccupied with suckling and ingestion of food, especially milk. The phantasies consisted of a need for love, and were concerned with receiving love as an infant. In general, they exhibited insecurity which threatened the pursuit of new goals other than the ones set out or established by parents. Two in the group yielded to the demands of an over-protective mother, yet harbored an inner resentment which accompanied a compulsive need to deny his own satisfactions or inclinations. Not infrequently there was present the fear of failure to fulfill his own ambitions, and in planning ahead; often failure was anticipated. Changes were reacted to with tension and anxiety regardless of ultimate success, as each new situation was accompanied by the fear of disappointment. There were strong obsessive-compulsive factors in several of the patients, who exhibited excessive

orderliness so as not to permit the possibility of making an error. Unimportant details were assiduously observed. Working under the pressure of a strict supervisor provided the spurt of tension bringing about higher effectiveness.

The patients were classified in terms of tendency toward depressive, obsessive, compulsive, and anxiety states, and the categories were determined by agreement of observers from material in the therapeutic situation. The depressive group was considered as being mild to severe with definite sadness as a habitual mood and a desire not to face the day, a reduction of self-esteem and dim outlook for the future. There was the expressed idea of having an ulcer as "a cross to bear," plus difficulty in concentration, wishing to cry or actual crying, a sense of injustice and difficulty to sustain obligations. In the second group under the depressive category the individual spoke of being depressed and "only a sense of humor being all that kept him going"—with a characteristic attitude of withdrawing from people, accompanied by suicidal ideation. Three of the patients fell in the category of a severe depression. Each of these suffered from a feeling of lowered self-esteem and fear of ridicule, while eleven entertained periodic suicidal ideation and had evidence of social withdrawal.

The relationship of peptic ulcer to a group of affective disorders, notably manic-depressive psychosis, has been well established. In the obsessive-compulsive group there was excessive orderliness, preoccupation with details, competitive thinking, episodic meticulousness, et cetera. Two exhibited severe repetitive compulsions which could be expressed without severe anxiety, while the remainder exhibited varying degrees of anxiety accompanying repetitive thinking and acting. Two patients lived in a constant chronic anxiety state, while seven suffered from anxiety symptoms of longer duration, each with definite free periods between episodes. The remainder were "anxious" in relation to recurrent ordinary hazards. Six male patients showed latent homosexual conflicts, and one female patient had been an overt homosexual for many years.

Our material suggests that the psychosomatic symptom of peptic ulcer may be a vegetative regression which prevents psychological regression. In two cases it was apparent that the removal of symptoms enhanced and actually developed such psychotic symptoms. By obtaining "tender loving

care" by his family or regression through nursing care and passive dependency, by receiving an infantilizing diet of milk and cream with frequent feedings, the individual could regress and still "save face." However, if he had no physical symptoms he could be forced to the competitive job situation and his need to assume responsibility for his family. If his immature and under-developed ego could not withstand the responsibility and it was impossible to regress without having physical symptoms, psychological regression or the development of more disabling symptoms or psychosis might then result. This is in keeping with the observations made on the use of ACTH in certain patients, who after the relief from physical symptoms develop psychotic manifestations.

Certain psychosomatic symptoms seem to represent earlier forms of reaction than do the later psychological difficulties. It is possible to distinguish two types of vegetative regression. Spite showed a severe nutritional change in young infants deprived of maternal care in and out of institutions. These infants developed eczema within the first year of life, as well as retardation in neuromuscular development, susceptibility to infection, and mental retardation. In this early period of infancy the traumatic events can be of such a magnitude that they have to do with the actual survival of the infant. Those which develop after the dawn of language are less regressive, fixed, and are more amenable to psychological therapy. Symptoms, therefore, could be indicative of partial regression, with the total personality dependent on the proportion of all other trends, both regressive and progressive. In evaluating the different impulses and their ramifications, the physiological factors seem more significant than the psychological forces in evaluating the infancy and early childhood experiences.

Since frequent intercurrent dermatological disorders, notably atopic eczema, occurred frequently in the early childhood and persisted into adult life in our peptic ulcer group, it is suggested that there is a relationship between these organ systems. The embryonic origins of the nervous system, skin and its integument, the special organs of sensation, and certain of the secretory epithelium are ectodermal in origin, these structures representing the protective physical barrier and physiological contact between soma and outside world. On the basis of the "pleasure principle," any stimuli from

the environment will be repeated as negatively or positively conditioned physiological responses in which an adaptation must be made. A histamine-like production can be observed in functional dermatological disorders which have been reported in early childhood and in infancy, where the child's survival is questionable. A histamine-like product also can be elaborated in the mucosa of the stomach, and its formation is dependent on the circulatory changes in the small arterioles and capillaries, especially along the lesser curvature of the stomach. These small terminal blood vessels are affected by emotion, as are other vessels elsewhere in the body. The pharmacological responses observed under emotional stress and in bringing back painful memories from early childhood, result in the increased volume flow of gastric juice with increased acidity and painful contractions. This physiological response may represent an earlier form of libidinal regression concerned with visceral functioning at maintaining homeostasis in order for the infant to survive. This physiological regression is preverbal and antedates psychological regression. According to Freud, in his "New Introductory Lectures in Psychoanalysis," our attitude to the phase of libidinal development has altered somewhat in general, indicating how much of the earlier libidinal phase persists side by side with and behind later organizations and can become a permanent representation of the personality. Thus regression can become partial and specific without regression of the entire personality. In accordance with these observations then, our material indicates that a psychosomatic symptom can be an evidence of partial vegetative regression preventing psychological regression. Thus Freud assumed that the primitive undifferentiated phase of development, in which no differentiated object is yet existent, has two qualities in which internal tension becomes conscious, namely pain and pleasure, the former being related to mounting tension and the latter to discharge. In the peptic ulcer group, the primitive ideation seems still regulated by the pleasure-pain signals arising from the tension inside the psychic apparatus. When the organism achieves new conscious qualities, a relative liberation from the exclusive rule of these pleasure-pain signals takes place. These new conscious qualities ultimately then make up what we refer to as "thoughts." Thus the instinctive reaction has two aspects, a qualitative and a quantitative one, with the quantitative one ex-

pressing affect charge into the inner zone of the somatic apparatus, resulting in somatic changes of affective origin; the qualitative one is the idea, the cathectic memory trace.

In summarizing, a general formulation of the psychodynamic factors basic in the series of patients might be considered as follows: The Oedipal situation is unresolved and poorly managed, with evidences of severe distortion of early mother-child relationship resulting in the development of strong passive feminine identification and retreat from the genital to the oral sadistic (anal) level of libidinal organization with a discharge of aggressive and sexual impulses. The expression of this libidinal need is fixed at the infantile level of dependent love and attention. The relationship of dependency and hostility becomes manifested early, and the material shows that the traumatic events during the infancy of these patients are related to survival and are different from the traumatic events occurring later in the more developed personality. The physiological gratifications provide for a protective relationship and provide the "missing link" to fulfill the primary needs denied earlier. The oral dependency and orality are vividly shown in dreams and phantasies, with marked hostility exhibited to the mother-figure as a result of the resentment arising out of the passive dependent attitudes. Love relationships, therefore, take on the coloration of mother-figures, with longings and strivings for dependency in marriage upon a mother-person. Unresolved hostility for the father which is poorly expressed, the father often resembling a symbol of authority with whom the patient vainly struggles in competition. This hostility prevents further establishment of satisfactory relationships toward authoritarian figures. The dependency on mother, wife and therapist show intensity and depth, and in many patients mastery of such individuals in the environment is accompanied by intense jealousy and demanding attitudes. Anxiety reactions in male patients as to their passive homosexual attitudes: in a cultural group where passivity in males is frowned upon, it is more difficult for a

male to regress, and this may explain the higher incidence of peptic ulcer among males. Uniform intense sibling rivalry: many of the exacerbations of painful physical symptoms can be associated with specific episodes in his life experience arising out of guilt feelings from sexual "transgressions," hostility, and inability to face ego-alien strivings. Protection from the anxiety is accomplished through the development of conversion or organ neurosis.

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The total Federal revenue collections for March, 1953, were the largest of any single month in the nation's history and were greater than the total for any single year prior to 1942. The March total was \$11,870,234,374, greater than all Federal revenues collected in the twenty-one years from 1890 to 1910, combined. The single

month's revenues topped the twenty-one-year total by more than \$219 million.

It is interesting to recall that 1939 is the last year in which the net spending of state and local governments exceeded that of the Federal government.—PAUL SHAFFER.

JMSMS

Cortisone and Pregnancy

By Edwin J. De Costa, M.D.

Chicago, Illinois

RECENT YEARS have witnessed a veritable parade of the so-called "wonder drugs." One might begin the era with the advent of prontosil in 1935, run the gamut of sulfa drugs, then the antibiotics, and wind up with the adrenocorticotrophic and adrenal cortical hormones. Even this is incomplete. Vitamins must be included and their number is still being augmented. An entire new

times that needed to maintain patients with adrenal insufficiency.

Further, cortisone apparently does not cure anything. It is capable of producing remissions in a variety of diseases by altering the usual host response. If it is not curative, how can we explain all the enthusiasm? Insulin does not cure diabetes, nor does thyroid extract cure myxedema. Still both drugs are exceedingly valuable. A remission indefinitely prolonged can be almost as valuable as a permanent cure if no ill effects accompany administration. Remission can also be exceedingly valuable in diseases or conditions of short duration. In addition to the therapeutic value of cortisone, observation of its effects has greatly advanced our

ADRENAL CORTICAL HORMONES

Influence on water and mineral metab.	Sex hormones 2nd sex char.	Influence on CHO & P metabolism Response to stress. Alteration of antigen- antibody response.
Desoxycorticosterone	Androgens	Cortisone (E)
	Estrogens	Hydrocortisone (F)

Fig. 1. Major physiological properties of adrenal cortical hormones.

group of "wonder drugs" is developing in the so-called antimetabolite field, of which the sulfa drugs and perhaps the various antibiotics are a part, and still another in the investigation of cholinergic and adrenergic and related agents. We are truly witnessing a revolution in the biological sciences.

The wonder drug which most excites the imagination is cortisone. Yet after three years, how much do we know about it? We can describe its physiological effects and we do know a bit about its action, particularly its antirheumatic properties. Interestingly, however, cortisone seldom finds application in conditions associated with actual cortical insufficiency. When used therapeutically, it is usually in patients with normal adrenal function and the dose employed is generally many

understanding of physiology and pathology of the entire body.

Cortisone is one of a series of steroid hormones isolated from extracts of the adrenal gland. These hormones, although chemically similar, exhibit wide differences in physiological properties (Fig. 1). Some, like desoxycorticosterone, have a profound influence on water and electrolyte balance. Others are essentially sex hormones and are partially responsible for the development of secondary sex characteristics, while a third group is intimately associated with carbohydrate and protein metabolism and the host response to stress. Cortisone belongs to the last group. It must be emphasized however that most steroids have multiple actions even though these differ quantitatively. Thus, DCA has a profound effect on electrolyte balance and a weak metabolic effect, while cortisone has a profound metabolic effect with less influence on electrolyte balance. Even the sex hormones, of which progesterone is possibly one, influence salt balance and protein metabolism.

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To appreciate the action of the adrenal cortical hormones it is necessary to study the adrenalectomized animal. Under ordinary circumstances the latter dies in four to seven days. However, if

evidence however that neither DCA nor cortisone is such. The histologic division of the adrenal cortex into three distinct zones suggests however that more than one hormone is produced.

Normally the activity of the adrenal cortex is controlled by the adrenocorticotrophic hormone (ACTH) of the anterior pituitary. In the intact animal, the effects of ACTH therefore are quite similar to those following the administration of cortisone. The relationship between the adrenal cortex and the adrenocorticotrophic hormone is similar to that existing between the gonads and the gonadotropic hormone in that a reciprocal mechanism controls the hormonal output.

There is an interesting relationship between the adrenals and the gonads. Chemically some adrenal and ovarian hormones are quite similar. DCA and progesterone differ solely by a hydroxyl group at C 21. (Fig. 2) Embryologically the adrenal glands and gonads arise from adjacent anlagen. Histologically, luteinized ovarian cells bear a close resemblance to the cells of the adrenal cortex. Thus one might expect adrenal and ovarian function to be interrelated. Since pregnancy is intimately associated with ovarian activity, one might even expect adrenal function and pregnancy to be closely related, and this seems to be the case. Pregnant animals survive much longer after adrenalectomy than non-pregnant animals. Normally in both animals and humans the adrenals hypertrophy and are hyperactive during pregnancy.

Pregnancy is a period of increased endocrine activity. We assume that a balance normally exists between the various hormones and that this balance is essential for the successful outcome of the pregnancy. For example, a certain level of progesterin, whether that be elaborated from the corpus luteum or placenta, is necessary for the normal continuation of pregnancy. It seems logical that imbalance might be associated with abnormalities of gestation. Such imbalance could occur spontaneously or it could be precipitated by the administration of potent drugs.

Since cortisone is a powerful adrenal cortical hormone, the thoughtful physician at once questions the effect it might have on reproductive functions and on gestation. An exhaustive survey of the literature fails to reveal a satisfactory answer to these questions. Therefore a series of experiments was undertaken in an effort to learn something about the effects of cortisone on reproduction and gestation.

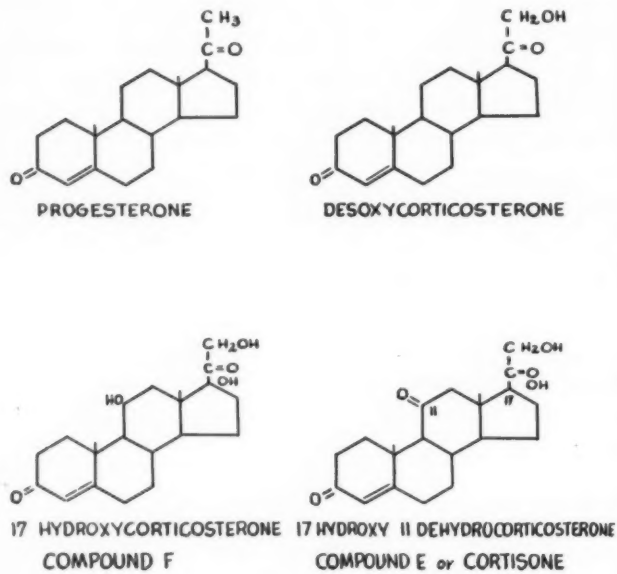


Fig. 2. Chemical similarities of progesterone and adrenal cortical hormones.

the adrenalectomized animal is given DCA or an adequate amount of salt, it will grow, even reproduce, and lead a fairly normal existence providing it is not subjected to stress.

Adrenalectomy seems to damage the renal epithelium so that its ability to resorb sodium chloride is decreased. Fluids are lost, the blood pressure falls, and before long the loss of NaCl is sufficiently great to be incompatible with life. If sufficient NaCl is administered either orally or intravenously to replace that lost through the kidneys, the normal electrolytic balance may be re-established even without hormones. However, correction of the electrolyte balance, either by using salt or salt-influencing hormones, still does not restore the normal response to stress. The animal easily fatigues and will die when subjected to conditions which ordinarily would have little deleterious effect. The ability to react to stress appears to be associated with the maintenance of peripheral circulation, a property which the C 11 oxysteroids alone control. And cortisone is one of these.

In spite of the demonstrable body need for mineral-regulating and stress-protecting hormones, we still do not know which steroid or steroids are the primary hormones. There is considerable

CORTISONE AND PREGNANCY—DE COSTA

I shall not burden you with the details of these experiments.⁴ Briefly, rabbits were used as experimental animals. Cortisone was administered intramuscularly in a daily dose comparable to the

curred. At other times, cortisone has been purposely prescribed during pregnancy for indications which may, for convenience, be grouped as follows: (Fig. 3.)

USE OF CORTISONE DURING PREGNANCY

1. Accidental - conception occurring while under Cortisone therapy.
2. Purposeful - in the treatment of :
 - A. Conditions existing prior to pregnancy and unrelated thereto.
 - B. Conditions arising during pregnancy but unrelated thereto.

Indications for the use of Cortisone in the above categories include :

Rheumatoid arthritis
Acute rheumatic fever
Acute disseminated lupus erythematosus
Addison's disease
Skin diseases
Inflammatory eye diseases
Various allergic phenomena

3. Experimental - in order to observe the effects on:
 - A. Normal gestation
 - B. Abnormalities of gestation
 - a. Toxemia
 - b. Hyperemesis gravidarum
 - c. Erythroblastosis fetalis

Fig. 3. Indications for the use of Cortisone during pregnancy.

maximum dose used in humans, if weight is taken as the criterion. We learned that cortisone did not influence the rabbits' ovulatory mechanism but it did decrease fertility, although conception occasionally occurred in animals receiving cortisone.

The effects of cortisone administered at various periods of gestation were next studied. It became obvious that cortisone could definitely damage the fetus. The extent of the injury varied with the time of onset and the duration of medication. The later in pregnancy the drug was initiated, the more rapid was the effect. Damage was manifested either by intrauterine death or premature labor. Intrauterine death was observed to occur in some animals many days after cortisone was discontinued. This deleterious effect on reproduction has been substantiated by recent reports from other investigators.^{5,6}

The literature reveals that cortisone has been administered to women during pregnancy. At times this has been accidental, the patient having been treated with cortisone when conception oc-

(1) In the treatment of conditions which existed prior to pregnancy and unrelated thereto; (2) in the treatment of conditions arising during pregnancy and still unrelated thereto; and (3) experimentally in order to observe the effects of cortisone in normal and abnormal pregnancy.

The conditions referred to in the first two categories include the diseases for which cortisone is commonly believed to be beneficial: rheumatoid arthritis, acute rheumatic fever, acute disseminated lupus erythematosus, Addison's disease, skin diseases, inflammatory eye diseases and various allergic phenomena.

Cortisone has been used experimentally during pregnancy to study its effects on the normal parturient, and on patients with unusual conditions which theoretically might be benefited. There are three such conditions in which cortisone has been administered: in toxemia, hyperemesis and erythroblastosis fetalis. The theory behind the use in toxemia is intriguing, even if difficult to understand. As already mentioned,

adrenalectomy and adrenal insufficiency are associated with salt loss, dehydration and low blood pressure. The administration of adrenal hormones will quickly re-establish the normal electrolyte balance. Furthermore, when cortisone is given to the intact animal or where there is excessive cortical activity, the blood pressure is elevated and salt and water are retained. Since this picture resembles certain aspects of toxemia of pregnancy, it has been conjectured that excessive cortical activity is responsible for toxemia. Even if such is the case—and objectively there is a fair parallelism—it is difficult to understand why giving more of a substance already in excess should prove beneficial. Of course, one can always fall back on the old reciprocal relationship between the adrenals and the pituitary. Giving cortisone suppresses ACTH which in turn reduces the level of endogenous corticoids. Or one can introduce a hypothetical upset of balance between various adrenal steroids which the administration of cortisone corrects. The only drawback to these theories is that they are still theories.

At any rate, with or without rational excuse, cortisone has been given to toxemic women. And what have been the results? To date, about a dozen patients have been so treated and, as with normal pregnancy, there is no evidence that the fetus has been damaged. Since toxemia is a disease of late pregnancy, this is particularly interesting. It will be recalled that in the rabbit damage was most readily produced late in pregnancy. And what about the effect on the toxemia? One conclusion seems evident: in the dose employed, the patients did not become worse. One author¹² believes that there was clinical improvement, although the blood pressure remained unaffected. However, since his patients also received the usual routine general care for toxemia, it is difficult to evaluate the success. Another author was unable to observe any effect.¹⁰

Cortisone has been administered early in pregnancy to patients with hyperemesis gravidarum with some improvement.¹⁴ As yet this has not been reported in the literature. The rationale here is equally strange because it is based on the premise of cortical deficiency rather than excess. It is presupposed that the adrenals are unable to meet the demand of early pregnancy and the patient develops a picture of hypocorticism: nausea, vomiting, weakness and low blood pressure, similar to that observed in Addison's disease. This theory

is not new; crude adrenal extracts, now known to have possessed only a minimal steroid content, were used years ago and with apparent success. However, since suggestive therapy can play so important a role in the management of hyperemesis, it is difficult to evaluate the effectiveness of cortisone. But again certain observations emerge: (1) if effective, cortisone is certainly not specific; and (2) there is no evidence of fetal damage following the administration of cortisone early in pregnancy.

One of the effects of cortisone not yet mentioned is its ability to alter antigen-antibody reactions. This is the basis for its use in the treatment of allergic phenomena such as asthma, hay fever and hives. Since erythroblastosis fetalis results from an antigen-antibody reaction there is logic in the assumption that adrenal cortical hormones might modify this reaction. Again the literature reveals about twenty instances in which cortisone or ACTH has been employed in an effort to salvage the fetus of the Rh(-) sensitized mother. Unfortunately, in most of the reported cases, neither the titer nor the fetal salvage rate has been influenced.^{5,8} However, recent reports are more encouraging.^{1,2,9}

We can summarize the effects of cortisone in this third category—that in which it has been used experimentally in normal and abnormal pregnancy—by stating that there is, as of the present, little evidence that cortisone is of any benefit in the conditions for which it was used, nor has there been any evidence that cortisone has produced any harm to either fetus or mother.

Confirmation of these observations, that cortisone does not affect either the mother or the fetus adversely, has been made by Margulis and Hodgkinson.¹¹

Even if there is no reported evidence of damage, cortisone is not considered an innocuous drug. There are certain side effects which usually become manifest with prolonged administration if the dose exceeds 75 mg. per day (Fig. 4). These include psychic disturbances, fluid retention with edema, hypertension, occasionally glycosuria, acne, weakness, and alterations in healing. Because of these reactions, there are definite contraindications to the use of cortisone, whether the patient is pregnant or not. These include mental disturbances, congestive heart failure, chronic nephritis, hypertension, Cushing's syndrome, diabetes mellitus, peptic ulcer and tuberculosis.

I have observed the effects of cortisone during

CORTISONE AND PREGNANCY—DE COSTA

pregnancy on five patients. In two patients, conception occurred during treatment, one for rheumatoid arthritis, the other for recurrent acute rheumatic fever with mitral stenosis. The patient

Several interesting observations are possible:
(1) Since the chances of survival of a twenty-seven week gestation are poor at best, there is no indication that cortisone affected the fetus ad-

UNDESIRABLE EFFECTS	therefore	CONTRA-INDICATIONS
Psychic disturbances		Mental diseases
Fluid retention & edema		Congestive heart failure Chronic nephritis Cushing's syndrome
Hypertension		Hypertensive disease
Hyperglycemia & Glucosuria		Diabetes
Alteration of healing		Peptic ulcer Tuberculosis
Acne		

Fig. 4. Undesirable effects and contraindications.

with rheumatoid arthritis spontaneously aborted at fourteen weeks; the pregnancy in the patient with acute rheumatic fever was therapeutically terminated at the eighth week. In both instances the fetus and placenta appeared normal. From these patients we learn that, as in the case of the rabbit, cortisone does not necessarily upset the ovulatory mechanism and fertilization and implantation can and do occur.

The remaining three patients were treated for conditions not primarily related to the pregnancy. One patient was treated for disseminated lupus erythematosus antedating gestation, one patient for an erroneous diagnosis of rheumatoid arthritis developing during pregnancy, and one patient for allergic phenomena. In each instance, a living baby was delivered at term. The history of the patient with the allergy is unusual and deserves special mention. She was a thirty-one-year-old primipara who, following a violent sneezing attack due to an allergic rhinitis, ruptured the membranes in her twenty-second week of gestation. Labor did not ensue and it was thought advisable to try to carry the fetus to viability. Cortisone was given to control the distressing sneezing and the patient was kept in bed except for bathroom privileges. During the next thirty-nine days there was no sneezing and she felt remarkably well. At that time she began to bleed vaginally and treatment was discontinued. Within thirty-six hours she went into labor and delivered a 1090-gram male infant which survived.

versely; (2) since intrapartum infection did not occur in the face of ruptured membranes, there is no evidence that the normal defense mechanism against bacterial invasion was affected; and (3) since the child's vision is normal, retrolental fibroplasia, so common in tiny prematures, did not occur. Obviously, one swallow does not make a spring, but it is pleasant to believe that the suppression of fibroplasia—another property of cortisone—may have been a factor in the apparent normalcy of this baby.

Little has been said about ACTH: it too has been used during pregnancy, some of the indications being identical with those for cortisone. The number of scattered cases to be culled from the literature is about the same as for cortisone, approximately twenty. Here too there is no evidence of either maternal or fetal damage.

One may conclude therefore that although cortisone interferes with pregnancy in the rabbit, there is no evidence of this effect in the human. These observations serve to remind us that data obtained from the experimental animal cannot always be applied to the human.

On the other hand, we have also seen that the indications for the use of cortisone during pregnancy are few and far between—and at present, in the dose employed, cortisone does not seem to have any value in the treatment of conditions specifically allied to pregnancy.

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(Bibliography on Page 684)

The Epilepsies

Their Diagnosis and Treatment

By Roland P. Mackay, M.D.
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THE TERM "epilepsy," cannot be satisfactorily defined. The word is of ancient usage, and actually means "fits," or seizures. As at present employed, it includes all convulsive disorders, of whatever etiology and of whatever clinical type, both with and without actual motor phenomena. There is a rather widespread tendency to restrict the term epilepsy to those convulsive disorders for which no evident cause can be found and which therefore may be considered "idiopathic." If there is indeed a specific constitutional, and perhaps inherited, "disease" to which the term epilepsy might be restricted, and if such a "disease" could be diagnosed with any surety, this usage might be justified. As at present, however, the matter is too uncertain, and the so-called "idiopathic" or cryptogenic class of convulsive disorders is constantly being diminished as more and more cases are moved over into a "symptomatic" convulsive category, so that no definition of such a "true" epilepsy can be made. If therefore the word, epilepsy, is to be used at all, it ought, in the current state of our knowledge, to be made synonymous with "convulsive disorder," and with no implied etiologic connotation. With this basic convention, we may for convenience subdivide the epilepsies into those cases which are of known, and those that are of unknown, origin. This plan we shall follow here.

Clinical Types of Seizures

Epileptic seizures are of several *clinical* types. The terms used to denominate these types are, for the most part, of ancient origin and are purely descriptive, although modern studies have led to the introduction of many terms with etiologic or even anatomic connotations. Thus the nomenclature of the epileptic states has become most confusing. We shall pick our way with care through these terms.

Grand Mal.—The Greeks from the time of

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Hippocrates recognized the "great disease" and the "little disease"; later came the Latin terms "morbus major" and "morbus minor," and in the XIX Century the French equivalents, *grand mal* and *petit mal*, now in common usage. The major convulsive seizure, or grand mal, may begin with a subjective warning or "aura," consisting of an indescribable epigastric sensation which rapidly ascends to the head, or of almost any other sensory state, visual, auditory, olfactory, somatic or whatnot. The modality or location of this aura may have value in localizing the onset of the cerebral discharge. An "epileptic cry" may follow, with immediate, generalized motor convulsive movements which throw the whole body into tonic rigidity in an opisthotonic or other grotesque posture, sometimes with the ascendancy of certain patterns leading to conjugate deviation of the eyes and head, or extension of some limbs and flexion of others. If standing, the patient falls like a log and may injure himself. After several seconds the tonic contractions thin out into clonic, repetitive jerks of explosive vigor, involving the whole body. During the motor phenomena, respiration is abolished, the face becomes suffused with blood or waxy pale and salivation is often increased. The tongue may be protruded and bitten. The actual convulsion lasts one to two minutes, sometimes longer, and ends when the clonic jerks died out, often with one last severe jerk of the whole body. Involuntary urination or defecation may follow the convulsion, as respirations are resumed in stertorous form, frequently blowing saliva, perhaps blood-stained from the bitten tongue, between the blue lips. Coma persists for several minutes, perhaps for hours, and ends as the patient passes through stupor and confusion to puzzled consciousness, often to find his head violently aching and a great lethargy dragging him to sleep. He may be violent or show other inappropriate behavior during his period of confusion, and such bizarre actions may continue for an hour or more.

Many variations of this complete seizure may be seen, but usually any given patient exhibits the same sequence of events in every grand mal seizure, although he may also suffer from other types of attack on other occasions. Sometimes one grand mal seizure may pass directly, or after a brief period of coma, into another, thus establishing the so-called status epilepticus which may continue for hours.

Petit Mal.—Minor seizures occur chiefly in children, but may appear in adults, alone or interspersed between grand mal attacks. In the young they may occur with amazing frequency running into scores or even hundreds a day, and effectively blotting out all mental life. When very brief and frequent these sometimes constitute what is called *pyknolepsy*—a term for which there is little justification. Grand mal seizures may occasionally intervene in the patient with petit mal, and often the same aura which may introduce the more severe attack may also herald the milder one. As the child with petit mal grows older he may have fewer and fewer attacks until they disappear forever, or he may gradually exhibit more and more of the major seizures as the minor ones diminish in frequency.

The petit mal attack is simply an abruptly on-setting, brief period of altered or severely obtunded consciousness, in which the sufferer stares blankly, perhaps blinks a few times, or exhibits a few small facial twitches or lip movements, while dropping an object held or ceasing to perform an act in progress at the onset. He does not heed commands, or later remember them. He may continue to walk if an attack occurs while he is so engaged. In most cases the duration of such seizures is only a few seconds or a minute.

So-called *akinetic* epileptic seizures resemble petit mal in that few or no motor phenomena are noted, but they differ in that they abolish consciousness for so long that the patient falls to the ground for several minutes to an hour or longer. The term "akinetic epilepsy" has, with doubtful propriety been applied also to the post-ictal exhaustion noted in an extremity after a focal motor seizure in that part.

Psychomotor Seizures (epileptic equivalents) constitute a very large and clinically heterogeneous group of complicated and often bizarre attacks. They have been known, at least in part, since the days of Hughlings Jackson, but recent years have added greatly to our knowledge of them. Though widely varied in their clinical characters, many arise from discharging foci in the anterior portion of one or both temporal lobes, and have certain electroencephalographic features in common. Some of them were once thought hysterical, and may still easily be confused with hysterical fits. The term "epileptic equivalent" is inappropriate, since they are true epileptic phenomena, not

merely equivalent to epilepsy. At least three sub-varieties may be distinguished.

Ictal Automatism (co-ordinate epilepsy).—In these attacks the patient abruptly breaks off the stream of his behavior to perform inappropriate motor acts of varying complexity and bizarreness, with subsequent amnesia for the entire episode. These motor phenomena are quite synergic and appear purposeful, ranging from random, dream-like acts such as unbuttoning the clothes, walking aimlessly about or moving furniture, to unprovoked violence in which other persons may be attacked or articles broken or thrown about. Such behavior usually persists for a few minutes; it has been said to last for hours or days—a statement it would be well to doubt. An ictal automatism ends as abruptly as it began, leaving the patient usually aware that "something has happened" and vaguely ashamed, though amnesic for all details.

Ictal Amnesic States.—These states constitute the second form of psychomotor seizure, and are less common than the automatisms just described. In these, the patient simply continues his previous behavior (e.g., driving a car, operating a comptometer) without break and with full accuracy and appropriateness. Later, he has complete amnesia for the period—usually a few minutes—in question. A patient of mine, a clerk, while making out pay-checks for the office force, suddenly realized she had made out several "without knowing it," and yet quite correctly. In such cases bystanders may notice nothing amiss.

Ictal Dreamy States.—A third type of psychomotor seizures consists simply of brief periods of impaired but not lost consciousness, with a "dreamy" quality of unreality, a sense of unwonted familiarity (*deja vu*), or an illusion that observed objects are of gigantic or miniscule size, or are rapidly approaching or receding from the patient. Sounds may seem very loud and near, or far, far away. The two essential qualities of all such attacks are (1) the bizarre distortion of the sensorium and (2) the queer, unreal, or inappropriate, often eerie, emotional experiences associated with it. These attacks, like other psychomotor seizures, are of only a few seconds' duration, and end as abruptly as they begin. Such dreamy states may accompany olfactory or gustatory hallucinations of momentary duration (so-called *uncinate* seizures,

because of their origin in the uncus of the temporal lobe), and they may serve only as the herald or "aura" for major convulsive seizures (grand mal). They were originally called "intellectual auras" or "highest level fits" by Hughling Jackson.

Myoclonic Epilepsy.—In a few rare cases of persons suffering from major convulsive seizures, irregular powerful clonic muscular twitches may be observed between attacks. Frequently, these are bilaterally symmetrical, involving, for example, the pectoral muscles on each side, or the biceps and triceps muscles. These twitches may produce movement of the extremities, and may even interfere with the patient's gait or throw the patient to the ground. According to Wilson, they may be accompanied by the briefest of interruptions of consciousness, and may be the patient's only clinical evidence of epilepsy. In a special group of such patients, familial incidence is recognized. These have been called the familial myoclonic epilepsy of Unverricht, after their first describer.

Focal Epilepsy.—As we shall see below, the definition of "focal epilepsy" is no longer easy, since recent work has shown that certain cases formerly not considered focal (e.g., the psychomotor types described above) arise from localized disturbances in the brain. However, since the days of Hughlings Jackson, certain motor convulsive seizures have been recognized as focal, because the convulsive movements began in a single, small group of muscles as clonic twitches, and spread progressively within a few seconds to adjacent muscles, on to involve the whole side of the body, or even to end in a generalized convulsion. The point of origin of such a seizure always indicates that the irritative lesion is in the corresponding area of the contralateral motor cortex (pre-central gyrus). As a rule, consciousness remains intact in such cases unless and until the convulsive movements become generalized. Focal motor seizures of this type have been called *motor Jacksonian epilepsy*.

Exactly comparable focal sensory seizures are also well known. In these, a sensory paresthesia begins in a small area and spreads by a similar "march" to adjacent areas, until wide regions or the whole body surface is covered. Again, consciousness remains intact unless and until the paresthesia crosses the mid-line of the body. Such

focal sensory seizures may be accompanied by, or lead immediately to focal motor seizures. Thus, the concept of *sensory Jacksonian epilepsy* is readily formed.

Special Sensory Focal Epilepsy.—A less obvious, but equally definite sensory focal epilepsy is characterized by an onset with hallucinations of the special senses, instead of somatic paresthesias. Examples are seizures beginning with formed or unformed visual or auditory hallucinations, or hallucinations of the olfactory or gustatory modalities. Such auras, especially the olfactory and gustatory ("uncinate") ones, are usually accompanied by complicated sensorial and emotional states, such as feelings of unreality or a strange, confused sense of familiarity which is inappropriate to the circumstances, or other, indescribable feelings. Unformed visual auras (flashes of light or color) suggest a discharging lesion in the contralateral occipital lobe, while the formed auras (e.g., trees, houses, "a little old lady dressed in brown") imply irritation in the contralateral temporal lobe. The olfactory and gustatory (uncinate) auras arise from irritation of the uncus of the temporal lobe, but lateralization is not possible on purely clinical evidence. These special sensory auras may constitute the entire seizure, or may at once lead to major convulsive seizures (grand mal), while the olfactory or gustatory hallucinations may also (and more frequently) introduce psychomotor seizures of the "dreamy state" type, or automatisms. Contrary to the hallucinations of the psychotic, both special and somatic "aurae" are recognized by the patient as "unreal" or hallucinatory.

Diencephalic Epilepsy.—This type, so-called, is a rare, only recently recognized, and perhaps doubtful type. It is featured by abrupt and inappropriate visceral autonomic crises, with paroxysmal sweating, tachycardia, dyspnea, trembling and perhaps gastrointestinal unrest. Some clouding of consciousness or sense of unreality may accompany such crises.

In our discussion of the clinical types of epilepsy, it remains only to mention the rather rare cases, in which specific forms of sensory (or emotional) stimulation may induce attacks. Many cases are on record in which bright light, and especially rapidly flashing light, precipitates a seizure ("photogenic epilepsy"). In other patients music, and usually of some particular mood, may

bring on seizures ("musicogenic epilepsy"). Any neurologist can cite instances in which emotional shock seemed to precipitate attacks. In all of these the stimulus is, of course, only a precipitant, and not the basic cause of the convulsive disorder.

Etiologic Types

Symptomatic Convulsive Disorders.—It is at once apparent to any clinician that many cases of convulsive disorder may be attributed to specific antecedent "causes," such as tumor of the brain, trauma, uremia, head injury, heart block, et cetera. But in a fundamental sense, the question of etiology remains unsolved, since it appears that such "causes" are effective only in certain "vulnerable" persons. For example, in some persons, the most severe injuries to the brain are never followed by convulsions, while in others even mild injuries may establish a convulsive disorder. No one knows why this is true; if electroencephalograms could be done *before* head injury, it *might* be discovered that only those persons with pre-existing cerebral dysrhythmia ever develop post-traumatic convulsive states. However, such an assumption on existing evidence is at least very doubtful.

But aside from this basic reservation, one may profitably speak of symptomatic convulsions, and is obligated to look for etiologic agents in every case, in order to institute rational treatment. A list of causes can never be complete, but certain groups may be recognized. A suggested etiologic classification follows; under each heading, further examples can easily be inserted.

1. *Gross Cerebral Disease:* Tumor cerebri; trauma to brain; infections (meningitis, encephalitis, syphilis); degenerations (Pick's disease, Alzheimer's disease, Schilder's disease); gross hemorrhage, intracerebral, subdural, subarachnoid, of whatever cause; spastic palsies of childhood, of whatever etiology, et cetera.

2. *Metabolic Disturbances:* Uremia, eclampsias, various toxemias, diabetes, hypoglycemia, et cetera.

3. *Intoxications:* Alcohol, metals, such as lead or arsenic, drugs, gases, et cetera.

4. *Circulatory Disturbances:* Cerebro-vascular anomalies, cerebral angiitis, heart block, parox-

ysmal tachycardia of various types, carotid sinus reflex, certain allergic states, et cetera.

The modern clinical management of patients with convulsive disorders requires that such etiologic factors be carefully sought for in every case. It is for this reason that the study of epilepsy demands the broadest knowledge and experience of the whole field of medicine, and requires, above all, a mature and wise clinical judgment. No set scheme for the study of all cases can be prescribed, for unique features will always call for special thought and unusual approaches.

Cryptogenic Convulsive Disorders.—Despite the most intensive search, no "causative" factors will be found in the majority of cases. This majority of our patients may then be said to suffer from a cryptogenic, or "primary" convulsive disorder. With the advance of medical knowledge and the sharpening of our investigative techniques, more and more cases which were formerly "cryptogenic" become at last "symptomatic." In one sense the whole history of our knowledge of the epilepsies since the days of Hippocrates has been the story of the discovery of an ever greater variety of the "causes" of the convulsive disorders. Many examples might be cited, for instance the roles played in many cases by brain tumors, various infections, spontaneous hypoglycemia, cerebro-vascular anomalies, especially as revealed by angiography, and minor lesions of the temporal lobes, particularly in psychomotor seizures. This process may be expected to continue—perhaps eventually all seizures may be shown to be symptomatic, but of this we cannot be sure. It is at least possible that there will be an irreducible remainder of a sort of epilepsy truly primary, an inborn, perhaps hereditary, convulsive diathesis. Only the future can decide this question.

Electroencephalography

The recording of the action currents of the cerebral cortex is one of the major neurologic achievements of recent years. Electroencephalography throws light on many different diseases of the brain, but its greatest usefulness to date has been in the study of the epilepsies. The following account can be considered only the briefest and sketchiest outline of the contribution of electroencephalography to our knowledge of the epilepsies.

The normal electroencephalogram reveals a series of irregular waves varying in frequency between 8 and 12 per second, the so-called alpha-rhythm. The normal tracing exhibits none of the markedly slower waves, called the delta rhythm, no paroxysmal discharges or rapid or slow high voltage waves, and no build-up of voltage upon hyperventilation by the patient.

The abnormalities seen in the epilepsies consist of changes in the basic frequency—either faster or slower—of the alpha rhythm, and the appearance of paroxysmal bursts of high voltage, high frequency waves, or of high voltage, slow waves each preceded by a sharp spike—the so-called spike and dome pattern. The much slower “delta waves,” with or without spiking, suggest a destructive lesion of the underlying cortex. In addition sharp spikes may appear singly and in irregular sequences. These latter are especially apt to appear during sleep, as pointed out by Gibbs. Such paroxysmal bursts and single spikes usually appear simultaneously over all areas of the cortex in cases in which the clinical manifestations are generalized, but arise in localized areas when focal types of clinical seizures are noted.

It would be most fortunate if the abnormalities seen in the E.E.G. could be clearly correlated with the clinical types of convulsive disorders. In the nature of the clinical phenomena, this is manifestly impossible. In the first place too many patients show more than one clinical type of seizure. Attacks of petit mal occur more often in childhood, grand mal and the psychomotor types more often in later life, but the majority of patients exhibit more than one type of seizure. As a matter of fact, an abnormally rapid basic frequency, and paroxysmal bursts of rapid, high voltage waves tend to occur in patients whose disorder is predominantly of the grand mal type, while a slow basic frequency and paroxysms of “spike and dome” waves are seen chiefly in younger patients with petit mal, but the correlation is by no means absolute. Some patients are seen in whom the exact reverse relationship exists. There is a high correlation between the occurrence of isolated sharp spikes in the anterior temporal leads and some form of psychomotor attacks, but here again, grand mal seizures may predominate in patients with this type of abnormality in the E.E.G. It is therefore important to remember that the types of clinical seizures and the types of E.E.G. disturbances are not precisely measures

of the same thing, and cannot be equated with each other. Hence, it is wrong to speak of “grand mal tracings,” “petit mal tracings,” and “psychomotor tracings,” because of this lack of sure correlation, and, more importantly, because the terms “grand mal,” “petit mal,” and “psychomotor attacks” are clinical or phenomenological terms, and are in no sense descriptive of a tracing. Just as electrocardiologists have wisely restricted themselves to terms descriptive of the electrocardiographic tracings (e.g., “prolonged PR interval; inverted T wave,” et cetera), so it would be preferable if our electroencephalographers gave us readings descriptive of the E.E.G. tracings, and abjured any clinical or etiologically diagnostic terms. One gets hints of a diagnosis from E.E.G. tracings; one never gets etiologic diagnoses. These can only be made upon the study of all available data—historical, clinical, electroencephalographic, chemical or other.

It would be even more fortunate if therapy could be prescribed from the E.E.G. tracings. But if the final diagnosis cannot be read from the tracings, the therapy can even less be deduced from them. This fact is perfectly obvious from the diverse etiologic factors which may produce epileptic phenomena, since, where possible, therapy must be directed to causes, and not to results. Furthermore, even in those cases in which no “causes” can be found, in the “cryptogenic” epilepsies, it is by no means true that “grand mal” seizures, or E.E.G. tracings with “fast basic frequency with paroxysmal bursts of high voltage spikes” always call for one type of medication, while “petit mal” seizures and tracings with “slow basic frequencies and spike and dome waves” call for another type. And finally, a wide clinical experience, with the freest use of electroencephalography leads the writer to the opinion that therapy can be much more accurately determined on a basis of clinical data without the help of the E.E.G., than on a basis of E.E.G. data without clinical study.

Treatment of the Epilepsies

The therapy of the epilepsies is so vast a field and involves so much of the whole of neurology as to be beyond the scope of a single article. It is perfectly obvious that therapy must be individualized to meet the unique needs of each patient, to strike at the causative factors in all their diversity, from brain tumor to uremia, from sub-

dural hematoma to alcoholic intoxication, from cerebral aneurism to hypoglycemia. It would be impossible to treat of all these conditions here; we must restrict ourselves to the diagnosis and treatment of those cases of epilepsy which appear cryptogenic, after all diagnostic methods have failed to reveal any special cause.

The diagnostic study to be employed in any given case of convulsive disorder cannot be rigidly stereotyped. A meticulous history of the origin and development of the patient's convulsive and all associated symptoms—headache, visual difficulty, motor and sensory phenomena, et cetera—gives one a strong lead at the start. This should include careful inquiry into the past medical and family history. What is the age, the sex, the station in life and the work of the patient, and what were the circumstances attendant upon the first and subsequent attacks, as well as the precise details of some one, specific well-observed seizure? A careful general physical and thorough neurologic examination is indispensable, and will strongly suggest the subsequent special studies to be employed. These usually will include blood count, urinalysis, blood chemistry including fasting blood sugar estimation, blood Wassermann test and electroencephalography. X-rays of the skull will hardly ever be dispensable, and examination of the cerebrospinal fluid should be done unless contra-indicated by papilledema. Often an electrocardiogram will be desired; sometimes a glucose tolerance test. Pneumoencephalography (or ventriculography if a brain tumor is seriously considered) will be helpful if evidence of focal disease of the brain is at hand. Many other studies of a more recondite or unusual nature may be suggested by special features in the individual case.

The treatment to be used will follow logically after the penetrating diagnostic survey has indicated a specific cause for the seizures. Therapy in such symptomatic epilepsy will demand the widest general medical and neurologic skill, and may require the help of one's medical and surgical colleagues in other fields. Where treatment cannot be brought to bear upon the revealed specific causes, palliative anticonvulsant management and medication must be employed. Similarly, where no "causes" can be discovered, and cryptogenic epilepsy remains the only attainable diagnosis, these palliative drugs and procedures are available. Today the range of modern therapeutic

agents for the control of convulsive states gives us a wide and generally effective choice.

Phenobarbital is still probably the best all-round anticonvulsant, applicable to the greatest diversity of seizure-types and productive of the least undesirable side-reactions. The adult dosage usually ranges from $\frac{1}{2}$ grain to $1\frac{1}{2}$ grains three times a day, with proportionately smaller amounts for children. It is frequently helpful to combine phenobarbital with other drugs to be mentioned below. Although a sedative, this property of the drug is rarely very troublesome in the epileptic patient. Phenobarbital is especially effective in reducing or abolishing the severity and frequency of grand mal seizures. It is much less effective against petit mal and psychomotor attacks, although sometimes valuable here, too. Furthermore, it acts promptly, unlike some of the other drugs, and may be used, in the form of its sodium salt, in intravenous or intramuscular injections, for the treatment of such acute emergencies as status epilepticus no matter what the cause. Other barbiturates, such as sodium amytal, may be even more prompt and effective in these emergency conditions. It is important to remember that the sudden withdrawal of phenobarbital in cases in which it has been regularly employed, either as an anticonvulsant or simply as a sedative, may precipitate severe convulsive phenomena—the so-called "withdrawal seizures." Barbiturate addicts, deprived abruptly of their drug, often suffer withdrawal seizures, and changes in the medication of epileptic patients must be done slowly and with "over-lapping" of the old and new agents.

Dilantin, a much more slowly acting anticonvulsant, is especially valuable in the treatment of grand mal seizures of cryptogenic origin. It is much less effective against petit mal, and against those major seizures which result from gross brain disease such as the spastic paralyzes of childhood, neurological syphilis, and brain tumor. Dilantin given by mouth does not become fully effective for perhaps a week after administration is started, so that if it is being substituted for phenobarbital the latter must be continued for a week after Dilantin is begun. Dilantin is probably most effective when combined with small or moderate doses of phenobarbital. For adults, the average dose is 0.1 gram thrice daily but up to twice that amount may sometimes be given. Toxic effects commonly noted are a spongy hypertrophy

of the gums, which often results from average therapeutic doses, ataxia in walking, which sometimes occurs from large doses, and, rarely, various rashes seen in susceptible persons. Destruction of blood cells has been noted very infrequently. All in all, Dilantin is a most valuable agent against grand mal, especially when combined with phenobarbital.

Mesantoin, a modified Dilantin, has essentially the same action. It is, however, not so effective, dose for dose. In general twice as much Mesantoin must be given as Dilantin to achieve similar anticonvulsant results. Like Dilantin, it is most effective when used against major convulsive seizures of cryptogenic type, and much less valuable for petit mal or seizures due to organic disease of the brain. It does not cause sponginess of the gums, even when its dosage is as high as 0.1 gram six times a day, and ataxia rarely follows its use. It is occasionally, however, more seriously toxic in causing hepatitis or destruction of the blood elements. Thus patients receiving it must be watched carefully for signs of these disturbances, rare though they may be.

Tridione is the only drug which has a routinely significant effect against petit mal, and even against that seizure type it is not very effective in adults. It is given in doses of 0.3 gram two to four times daily, or smaller in small children. It has the disadvantage that when used in cases of both grand mal and petit mal, it may stop the latter, only to leave untouched, or even apparently to increase, the grand mal. Unfortunately, it is not easily combined with Dilantin, which leaves petit mal largely untouched, since the two drugs, when used together, seem to cancel each other out in therapeutic effect. It may be combined with phenobarbital with some effect in such cases of both grand mal and petit mal. Like many other newer drugs, it may occasionally damage the blood cells, producing aplastic anemia and agranulocytosis. Thus, patients receiving it must be carefully followed with this in mind.

Phenurone, one of the newest drugs in the treatment of convulsive disorders, is chiefly of value against psychomotor attacks, a type largely unresponsive to any other drug. It may be given in doses of 0.5 gram thrice daily, and may prove effective also against the grand mal sometimes associated with psychomotor epilepsy. Like other drugs, it is not always a perfect remedy. Its efficiency may sometimes be increased by combina-

tion with Dilantin, less often by combination with phenobarbital. Its toxic properties are occasionally alarming, since various mental disturbances and even psychoses may result from its administration, perhaps in 25 per cent of cases. It may also rarely cause blood destruction. Because of these toxic manifestations, Phenurone was kept off the market for two or three years pending careful experimental work and clinical reports. Used cautiously, however, it plays a useful role against a type of seizure not significantly amenable to any other drug.

Bromides, the oldest anticonvulsant, must not be forgotten, since it may assist materially against any type of seizure for which no other drug is adequate. Conservative dosage is grains 5 to 15, three times daily. It is usually best employed in conjunction with other agents. Because it, too, in large doses over long periods, may cause well-known toxic symptoms—the bromide rash, the bromide psychosis—it must be given with caution, and patients receiving it should be watched carefully. It has, however, no significant blood-destroying effect.

Other drugs, less noteworthy, may sometimes be of service, alone or in ancillary roles. The antihistaminics, and especially Benadryl, are at times useful in cases in which an allergic factor is operative. Such cases are very rare. Caffeine is occasionally helpful in combatting the somnolence of phenobarbital or bromides, and the same may be said for amphetamine. This latter drug is often of real help in controlling the difficult psychomotor attacks, preferably combined with other agents.

The ketogenic diet, introduced by Wilder some twenty-five years ago as an anticonvulsant measure, had a great vogue for several years, but has all but been abandoned. It has been abandoned chiefly because it was never very effective. It served at best to reduce the number of petit mal seizures in about 30 per cent of the cases in which consistent and adequate ketosis could be maintained. It had little effect except in children with petit mal, being of little or no aid in any other type of seizure or for other age groups. The greatest difficulty was in maintaining ketosis with a ratio of 2:1 between ketogenic and anti-ketogenic foods in average homes, considering the expense and unpalatability of the diet, and the practical difficulties of calculation and measurement. The introduction of the much more

effective Tridione at once made the ketogenic diet obsolete and unnecessary, although there are a few cases in which the toxicity or ineffectiveness of Tridione make it worthwhile to try the diet. It thus may fill a small need in a limited sphere.

To mention dehydration, once touted as a treatment for epilepsy, is to dismiss it. It has little or no value for obvious physiologic reasons, chief among which is the superb power of the kidney to maintain a stable water balance despite all our efforts. In all cases of epilepsy it is important, however, to avoid hydration. Seizures may be induced in epileptic patients by forcing fluids while administering the pituitary anti-diuretic hormone. Alcoholic indulgence, leading to "wet-brain," is similarly contraindicated for convulsive patients.

Cortical excision or lobotomy must be discussed as a modern method of combatting the convulsive disorders. Operations of this type are useful only in those cases in which a focal origin for the seizures can be demonstrated—i.e., in the Jacksonian and psychomotor epilepsies. Even in these, it is obvious that surgical attack is appropriate only after all simpler methods have failed or have been proved inadequate. The focus must first be most accurately determined, not only by clinical analysis of the seizures, but also by electroencephalography and electrocorticography, and confirmed by an experimental reproduction of the seizures by cortical stimulation. Naturally, therefore special techniques, in the hands of well-trained and experienced neurosurgeons, are a prerequisite to such operations. Furthermore, in the case of Jacksonian seizures,

the focus, when determined, must not be removed if it chances to lie in an area of the cortex which is indispensable—such as the motor speech area.

Special mention must be made of the removal of the anterior end of the temporal lobe in cases of psychomotor epilepsy. Such removal has been proved effective in a few cases in expert hands, but here, again, only after careful determination of the focus. If the focus lies in both temporal lobes operation is not indicated, and great caution must be exercised if the "dominant" temporal lobe is the offender, lest aphasia result. In some cases, a tumor may be found at the discharging site. In this case, the removal of the tumor rather than lobotomy is the procedure to be followed. For emphasis, surgical operations are contraindicated (except in the case of removable tumors) unless and until all other methods have failed.

Conclusion

The diagnosis and treatment of the epilepsies are, as we have seen, extremely complex and difficult, demand an application of widely diverse elements of medicine and neurology, and offer a great field for further research and experimentation. There is no "short cut" around these great difficulties, certainly not through electroencephalography or any other single technique. The practitioner must summon all his ingenuity and must use all that the whole science of medicine places at his disposal. He must therefore be a thorough and alert clinician; he cannot be a narrow technician or specialist.

RECURRENT ACUTE INTUSSUSCEPTION

(Continued from Page 602)

years of age are especially susceptible. There are four primary features of the disease:

1. Paroxysmal attacks of abdominal pain.
2. Vomiting.
3. Blood streaked stools.
4. Palpable abdominal mass.

Recurrent acute intussusception is rare; such a case is reported.

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The Health Study of the Detroit-Windsor Air Pollution Investigation

By Joseph G. Molner, M.D., M.P.H., and
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THE PURITY of the air we breathe is rapidly becoming a subject of great importance to all concerned with the health and well-being of people. Apprehension concerning the health effects of atmospheric pollution has been intensified in recent years by the occurrence of three major smog disasters.

The first of these occurred in the Meuse Valley of Belgium in December of 1930.¹ At that time, approximately sixty-three deaths and a large number of illnesses were attributed to a dense irritating smog which covered the valley for several days. It appeared to some observers that most of those affected were elderly and that many were patients with chronic pulmonary and cardiac disease. Nevertheless, there were illnesses among previously healthy adults and children. The symptoms most frequently seen were dyspnea, paroxysmal cough, lacrimation, retrosternal pain, nausea and vomiting. Necropsies of the fatal cases showed diffuse congestion of the mucosa of the entire respiratory tract. A specific chemical contaminant has never been clearly shown to have been responsible for the mortality and morbidity, although fluorides, sulfur dioxide, and several other chemicals have been suggested.

The second of these incidents took place in the town of Donora, Pennsylvania, in October of 1948. For several days a dense irritating smog covered the town. During this period there were twenty deaths and a large number of acute illnesses attributed to the atmospheric pollution. The symptoms most frequently seen were smarting of the eyes, sore throat, cough, dyspnea, headache, nausea and vomiting. Again, those elderly patients with chronic pulmonary and cardiac disease were most frequently and most severely affected. Studies of the Donora disaster were undertaken by

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the U. S. Public Health Service² and by other groups³ and the findings have been reported in several recent publications. The U. S. Public Health Service investigators felt that the cause of the episode was the accumulation in the atmosphere of chemical irritants. They did not feel that any one agent could be indicated as the specific cause of the morbidity and mortality. The reason for the unusual accumulation of contaminants in the atmosphere during the period in October, 1948, was thought to be the prolonged presence of a meteorologic condition known as a temperature inversion. Temperature inversion refers to a meteorologic situation in which the usual decrease in temperature with elevation is not present. Therefore the usual upward flow of air which carries away contaminants is absent, and the accumulation of irritating substances can take place.

The third major air pollution disaster took place in Poza Rica, Mexico, in September of 1950.⁴ Large amounts of hydrogen sulfide were inadvertently liberated into the atmosphere at a time when the available meteorologic data indicated the presence of a temperature inversion. In a very short time, the exposure to this atmospheric pollution resulted in twenty-two deaths and the hospitalization of 320 people.

Although it is thus well established that there have been deleterious effects on health in these acute smog disasters, the health effects of prolonged exposure to lower concentrations of atmospheric contaminants are not clear. Dorn⁵ has recently stated, "The time to study the relationship of air pollution to health is before rather than after the acute outbreak occurs. Long time statistical studies of morbidity in communities with appreciable air pollution and in communities relatively free of air pollution must be conducted if a reliable measure of the effect of air pollution is to be obtained."

The opportunity to perform such a study recently arose in the Detroit-Windsor area.⁶ The International Joint Commission of the United States and Canada, which was established by treaty in 1909, received a reference from the two nations in 1949 regarding the problem of air pollution in the Detroit-Windsor area. As part of an investigation which was to be under the direction of a Technical Advisory Board of the International Joint Commission, it was proposed that a study to determine the effects on health of prolonged ex-

posure to atmospheric pollution be initiated. This health study was to be performed by the health departments of the City of Detroit, the Province of Ontario, and the City of Windsor with the assistance of the Canadian Department of National Health and Welfare, and the U. S. Public Health Service. The basic plan was to conduct a long term morbidity survey in areas of both high and low atmospheric pollution to determine whether morbidity was significantly increased in areas of high atmospheric pollution.

It was recognized by the committee on the health study that an investigation of this kind would have to be planned and executed very carefully if dependable results were to be obtained. Other factors known to influence morbidity, such as age, sex, race, income, occupation, and diet, would have to be carefully controlled so that the only significant variable in the two populations being studied would be the degree of atmospheric pollution in their communities. It was also recognized by the committee that the health effects of air pollution might be so gradual and so subtle that their identification, apart from other conditions which influence morbidity rates, might be extremely difficult or impossible; however, this could never be determined without a trial study.

An attempt was made, therefore, to select several pairs of areas in Detroit and Windsor which had populations of similar socioeconomic character but which differed greatly in their degrees of atmospheric pollution. The selection of the study areas in Detroit was under the direction of Dr. W. Gafafer and Dr. H. Brinton of the Division of Occupational Health of the U. S. Public Health Service. Selection of study areas in Windsor was under the direction of Dr. A. Peart, Mr. W. McEwen and Mr. G. Josie of the Canadian Department of National Health and Welfare.

In Detroit, the smallest geographical unit which was thought to be practical for study was the census tract. An attempt was made, at the onset, to characterize approximately the socioeconomic status and degree of air pollution in each of the 369 census tracts of Detroit.

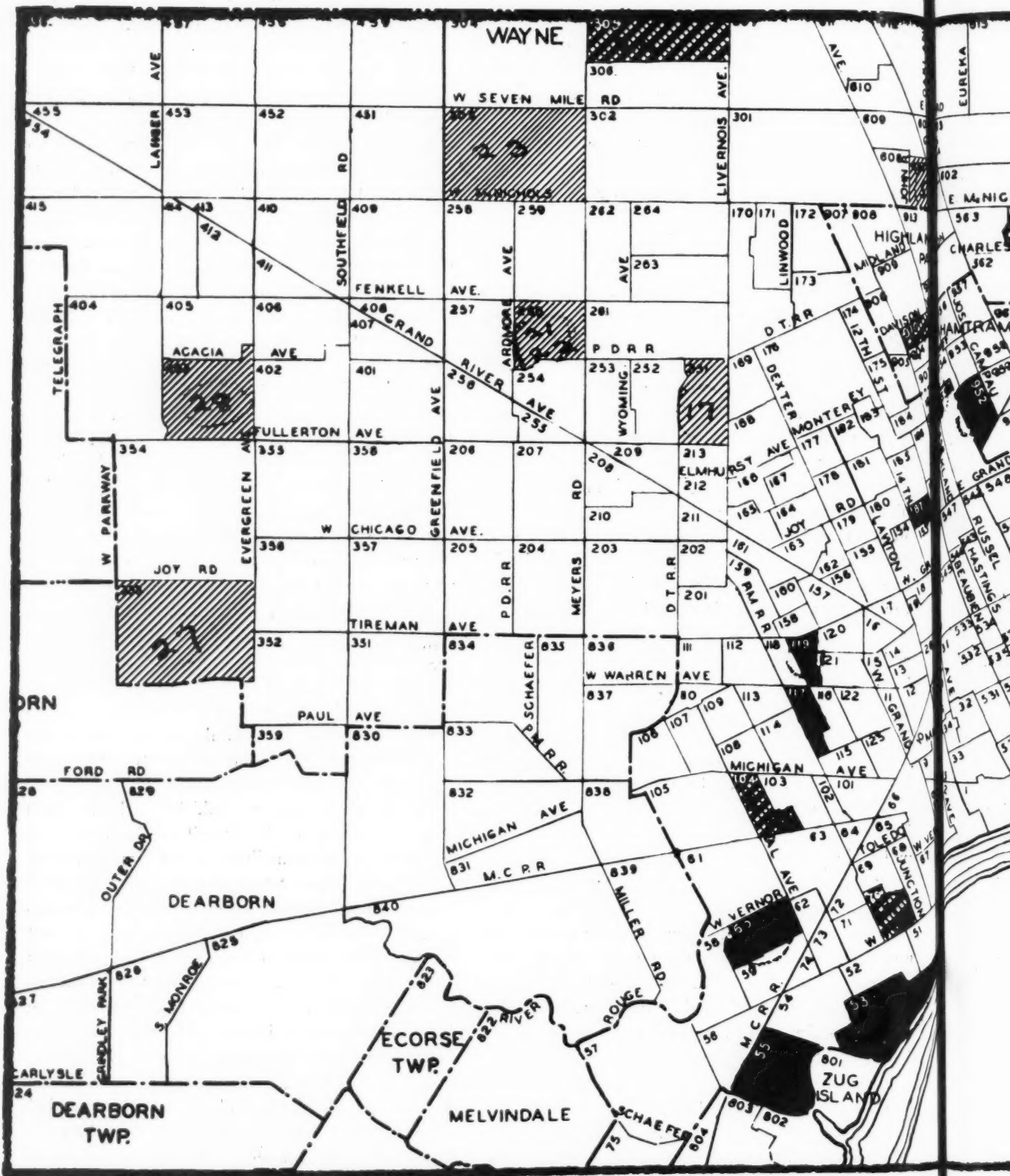
In the study of the socioeconomic status of each of the tracts, a large fund of available information was utilized. For each census tract, the census data provided information as to the median years of schooling, the percentage of people who were foreign born and nonwhite, the percentage of homes with mechanical refrigeration, and the per-

centage of homes which were owner occupied. Economic ratings were obtained for each tract from a sample survey conducted by one of the city newspapers several years ago. The Council of Social Agencies made available current data on general relief cases, aid to dependent children, and old age assistance according to census tracts. The juvenile court furnished data on the residences of youthful offenders. Health department records furnished total death rates, infant death rates and tuberculosis death rates in each of the tracts. These data were then transferred to census tract maps by appropriate shading. What at first appeared to be a heterogeneous mass of unrelated facts gradually could be seen to show a rather definite pattern and each of the tracts could be approximately characterized with respect to the socioeconomic status of its residents.

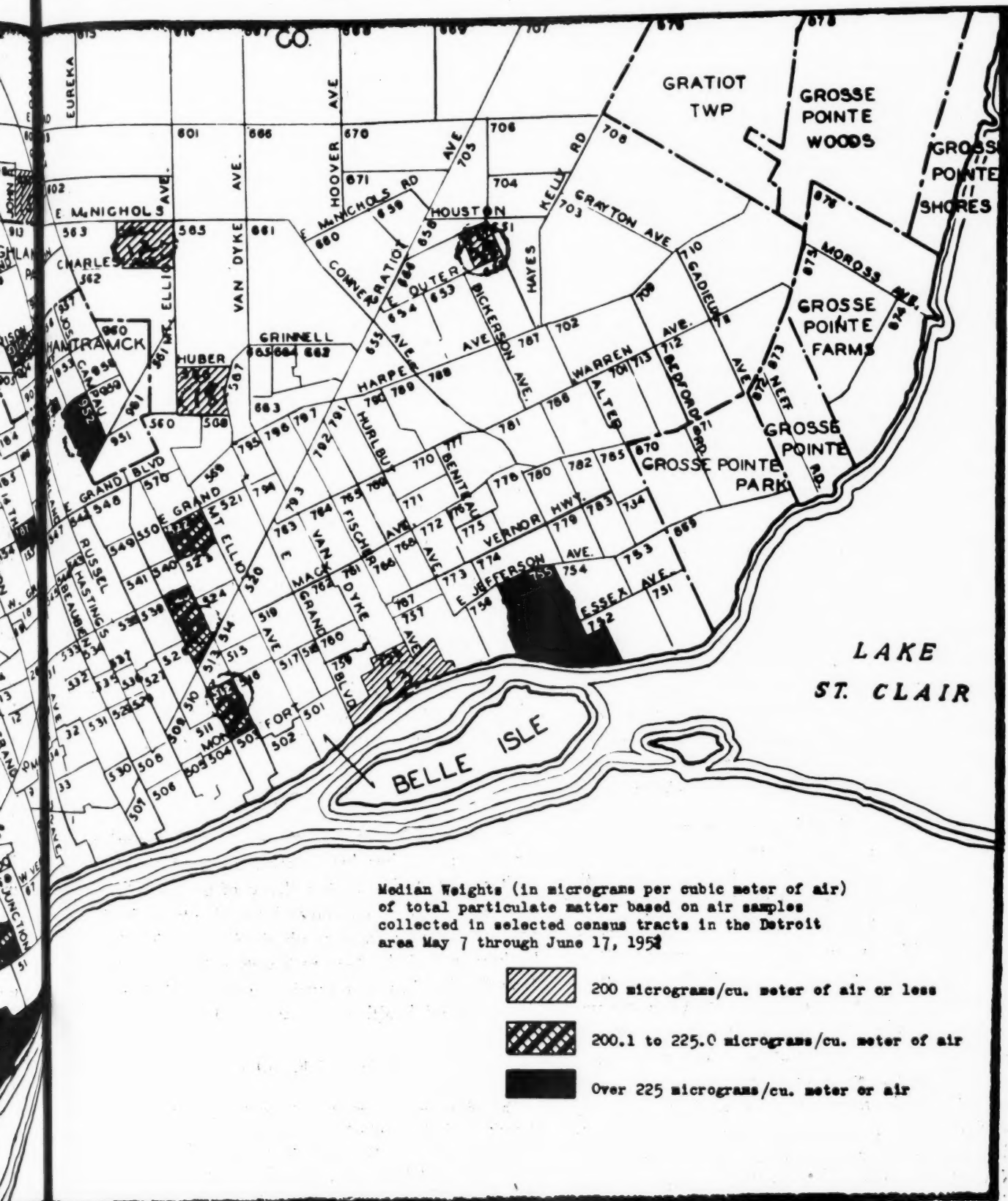
With the co-operation of the city smoke inspectors, similar census tract maps were prepared showing the location and character of each of the major air pollution emission sources. It was thus possible to visualize, in an approximate way, where the atmosphere was being contaminated and what the principal types of contaminants were in each area.

After study of these two types of maps, fifty-two census tracts were chosen as being of possible value in the selection of paired tracts for the morbidity study. Because of the association of atmospheric pollution with socioeconomic status, a number of census tracts could not be used in the study. The lowest socioeconomic status of a census tract with light atmospheric pollution set a limit below which no attempt could be made to match tracts. This resulted in the elimination of certain very poor populations living in areas of very high air pollution, since tracts with as low a socioeconomic status could not be found in any of the areas of light air pollution. On the other hand, the best socioeconomic status of areas of high air pollution set an upper limit and determined the maximum degree of socioeconomic well-being that could be accepted in areas of low air pollution, thus eliminating certain wealthy areas.

Actual visitation and inspection of each of the fifty-two tracts described above was then carried out. From the fifty-two tracts, twenty-eight were chosen as being suitable for selection of pairs of similar socioeconomic status but contrasting degrees of air pollution. These twenty-eight tracts then were intensively studied from the standpoint



AIR POLLUTION—MOLNER AND RABSON



of atmospheric contamination with a number of instruments and methods. These environmental studies were under the direction of Mr. G. Clayton and Dr. W. Fredrick in Detroit and Dr. Morris Katz in Windsor. Sampling sites in each of the census tracts were very carefully selected with emphasis placed upon their being as representative as possible of the entire tract. In two six-week studies, daily air analyses were performed in each of the twenty-eight tracts. These included daily determinations of suspended particulate matter as well as determinations of such gaseous contaminants as sulfur dioxide, fluorides, chlorides, carbon monoxide and aldehydes. The particulate matter collected at each of the stations each day was analyzed both chemically and spectrographically. Similar studies were carried out simultaneously in Windsor. While the air sampling was in progress, meteorologists made detailed studies of the daily weather for later correlation with the environmental data. The census tract map of Detroit (Pages 628-629) shows the median daily weight of particulate matter in each of the tracts included in the first six-week study. Detailed reports of the two six-week studies are now being prepared.⁷

The final selection of the pairs of census tracts to be used in the morbidity survey in Detroit has been deferred until the complete data on population characteristics in the 1950 census are available. In Windsor, two areas of similar socioeconomic structure but contrasting degrees of atmospheric pollution have already been selected.

The actual methodology of the proposed morbidity survey has been the subject of a great deal of discussion. Although the technique of morbidity surveying has been used extensively in a variety of problems, we know of only one small previous study in which it was used in an attempt to detect the health effects of atmospheric pollution.⁸ Therefore, such problems as the most suitable type of questionnaire, sampling methods, enumerators, and frequency of enumeration as well as countless other methodological problems are as yet unanswered. In planning our study, we have made extensive use of the information already available in the literature on morbidity survey techniques. Nevertheless, there remain a large number of specific problems in an air pollution morbidity survey which can be answered only by careful trials in a field study.

Pretests of several types of questionnaire have already been initiated in both Detroit and Windsor, and a pilot study in areas of similar socioeconomic status but contrasting degrees of air pollution will begin in the spring of this year. The pilot study will include approximately 500 families in Detroit and 350 families in Windsor. If the pilot study appears to be operating satisfactorily, the sample size subsequently will be increased to insure results of statistical validity.

Although the major study in the project is to be the family sickness survey described above, a number of supplementary studies also are being planned and initiated. These include the daily collection of morbidity data from certain especially vulnerable groups such as patients with bronchial asthma and cardiac disease. Simultaneously, daily determinations of atmospheric contaminants are being carried out, and it is planned to study the relationship of the morbidity data to the daily levels of atmospheric pollution. School and industrial absentee data also will be utilized in similar analyses.

It should be emphasized that the entire study is a single investigation taking place in both Detroit and Windsor, and that the field study on both sides of the Detroit River is under the direction of a single epidemiologist. The excellent co-operation that has existed among the officials of both nations indeed has been encouraging.

Summary

A brief review of experiences in three major smog disasters has been presented, and the importance of studies on the effects of prolonged exposure to lower concentrations of atmospheric contaminants has been emphasized. The historical background of the Detroit-Windsor Air Pollution Investigation has been outlined and the design of the proposed health study described.

Acknowledgments

The efforts of a large number of individuals in both Canada and the United States made the planning of this study possible. Gratitude is due to Dr. C. Anderson and Mr. J. Oliver, of the Detroit Health Department, and Mr. B. Linsky of the City of Detroit Smoke Abatement Bureau, in addition to those individuals cited in the text.

(References on Page 639)

The Acutely Inflamed Eye

By Peter C. Kronfeld, M.D.

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AS THE representative of ophthalmology at this meeting I feel embarrassed at not being able to present a more significant or more original topic. I wish I were in a position to tell you here today about the solution or hope of solution of one of our major problems, such as the diabetic retinopathy or the prevention of senile degenerative diseases of the eyes. Unfortunately I have nothing really encouraging to report with reference to either of these problems.*

The only excuse for bringing up the trite topic of acute ocular inflammation again is that the incidence as well as the type of acute inflammatory eye disease has changed very materially and steadily during the last twenty years. Some truth and at the same time some glamour could be added to my title by making it "the acute inflammatory eye disease of 1952."

The change has come about largely as the result of two factors: (1) the steady improvement in the state of general health of the nation, and (2) the greater efficacy of antiinfective drugs, specifically the sulfonamides and the antibiotics. The impact of these factors upon ophthalmology has been most noticeable in the field of acute inflammatory diseases, some of which have become almost extinct while the course of others has been reduced to mild, brief episodes. Some diseases not influenced by either one of the two factors have become relatively more prominent. Finally some new diseases or new etiologies have become recognized. Thus the face of ophthalmology has changed. To describe briefly these changes in the incidence and type of acute inflammatory eye diseases as they have occurred during the last ten years will be my topic.

The bulk of the acute inflammations is made up of cases of acute catarrhal or mucopurulent conjunctivitis. The incidence of this condition in the population has probably decreased somewhat as the result of better personal hygiene. The principal

change that has occurred in the field of acute conjunctivitis is the practical disappearance of the serious form of acute conjunctivitis, specifically the gonococcal type. While in the gonorrheal ophthalmia ward of Cook County Hospital in Chicago the incidence of bacteriologically verified cases of gonoblenorrhea between 1935 and 1939 was about 150 cases a year we now see one or two cases a year. The last new case of corneal complication of gonoblenorrhea was seen there five years ago. Gonococcal infection of the human conjunctiva has ceased to be a menace, and the same holds true for most forms of severe bacterial conjunctivitis. By having gained better control over the extraocular disease of which the conjunctivitis is a secondary manifestation, and by having gained better control over the local condition, a good many forms of conjunctivitis are being prevented, aborted, or greatly reduced in severity. Topical application of sulfonamides and antibiotics has proved strikingly effective against bacterial invaders and, at the same time, kind to the conjunctiva and cornea.

The ordinary garden variety of acute conjunctivitis, the condition called pink eye by lay people, is here in the Middle West most frequently caused by the pneumococcus. While the textbooks are undoubtedly right in saying that most of these forms of conjunctivitis are self-limited and clear up without any treatment, it is important to remember that the staphylococcus which ranks second in frequency as causative agent in acute conjunctivitis, is likely to set up a chronic blepharoconjunctivitis if not treated energetically in the beginning.

It is also important to remember that there exists a rather innocent looking acute conjunctivitis that can become quite a problem by its contagiousness, its duration, its corneal complications and its refractoriness to treatment. It is the so-called epidemic keratoconjunctivitis due to a well-defined virus which made its first, large-scale appearance in the United States as shipyard conjunctivitis in 1941 and became a serious industrial problem in 1942. The high communicability is due to the ability of the virus to survive drying and dilution. No other infection has produced a comparable number of infections in doctors and nurses or a comparable degree of office and clinic transmissions. Transmission of the disease has been shown to have occurred by the following means: (a) contaminated tonometers, (b) con-

Presented at the Eighty-seventh Annual Session Michigan State Medical Society, Detroit, September 24, 1952.

*In the January-February, 1953, number of *Diabetes* (Journal of the American Diabetes Association), Poulsen reported recovery from retinopathy in a case of diabetes complicated by Simmond's disease.

THE ACUTELY INFLAMED EYE—KRONFELD

taminated ophthalmic solutions, including pontocaine, cocaine-adrenalin, and homatropine, (c) direct finger to eye transmission and (d) in industry by welders' masks, goggles and common tools. After several years of just sporadic occurrence the disease became epidemic again in California in 1947 and may do so again at any time. The incubation period is seven to ten days and no form of treatment is strikingly effective. The early symptoms may be much more impressive to the patient than to the physician. They are lid and conjunctival edema, especially of the caruncle and plica, with mild hyperemia and only scanty discharge in which mononuclear cells predominate, plus a very definite swelling and tenderness of the preauricular gland. In any situation resembling this picture the most important consideration is prevention of spread of the disease. The outcome is usually favorable, both as far as vision and the functional integrity of the conjunctiva are concerned.

What has been said here about the bacterial forms of conjunctivitis applies more or less to the corresponding diseases of the cornea. Again sulfonamides and antibiotics have been wonderfully effective in preventing, nipping in the bud or arresting some of the formerly very serious and destructive forms of ulcerative keratitis.

Two forms of acute keratitis that used to contribute a major share of the acute ocular inflammations, have almost completely disappeared from the offices and clinics of the United States. These are phlyctenular disease and interstitial keratitis due to prenatal syphilis. The disappearance of the latter is to be credited largely to nation-wide improvement in prenatal care and the institution of prenatal antisyphilitic treatment when indicated.

Cases of phlyctenular conjunctivitis and keratitis used to fill whole wards of the eye institutions of this country and of Europe. The disease has become practically extinct in the United States as the result of more effective management of childhood tuberculosis and as the result of the correction of dietary deficiencies. Phlyctenular disease is still fairly common in Alaska where the death rate from tuberculosis has been said to be nine times that of the United States.

By the elimination of other forms of keratitis rather than by an increase in its own rate of

occurrence herpetic keratitis has become the most important keratitis of these times. A direct effect of inoculation with herpes simplex virus, this form of keratitis can become a serious problem principally because of the inefficacy of all known forms of treatment once the virus has gained access to the deeper layers of the cornea. The majority of us carry antibodies against herpes simplex and probably also harbor the virus in body fluids such as saliva. A trigger mechanism such as a cold, menstruation, et cetera, is usually operative in activating the virus and facilitating its entry into the cornea. It is most important to recognize the disease in its earliest stages, which are characterized by dendritic, superficial corneal infiltrates. A strong disinfectant such as tincture of iodine, applied generously to the diseased portion has an excellent chance of destroying the virus unless it has already invaded the deeper layers of the cornea.

No appreciable drop seems to have occurred in the rate of incidence of acute iritis, the disease caused usually by bacterial allergy and only rarely by an actual bacterial metastasis. The topical application of cortisone has greatly mitigated the course of the disease and thereby markedly reduced the clinic or office visits or days of hospitalization necessary to make the iritis subside.

Most of the acute bacterial inflammations of the inner eye, the so-called endophthalmitides, are responding to antibiotics, irrespective of whether they are endogenous or ectogenous in origin. There we have another example of an ocular disease, the outcome of which used to be a blind shrunken eyeball and nowadays often is an almost normal eye. The subconjunctival route of application of antibiotics has proved particularly effective in these cases.

Acute congestive glaucoma is still with us, unchanged in frequency or severity. Alarming as its symptoms may be our understanding of the mechanism of the disease has become so much better and our methods of treatment so much more effective that the ophthalmologist almost welcomes an early case of acute congestive glaucoma. Promptness of recognition and of institution of treatment is the principal factor determining the outcome.

*University of Illinois
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Diagnosis of Occupational Disease

By O. T. Mallery, Jr., M.D.

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A RULE for the diagnosis of occupational disease was laid down in the 17th Century by Ramazzini. He bade the physicians in Italy, when they had a case of illness in a working man, not to ask the patient only about his symptoms but to go carefully into the details of his occupation, for without this knowledge, a correct diagnosis could not be made. As in any disease, it is the duty of the physician attending the patient to make proper diagnosis, to institute proper therapy, and to advise as to preventive measures to avoid exaggeration or recurrence of the disability.

Ramazzini's advice is still needed today, for too frequently inquiry by the physician into the occupation of his patient is neglected or is satisfied by recording on the medical record the words "laborer," "machinist," or "foundry worker," which then comprise the total information considered.

The number of those gainfully employed in the United States is estimated to be in the neighborhood of 65,000,000 people, and for practically every occupation or profession some type of occupational hazard exists. The typist and the telephone operator may be exposed to fumes of solvents used in cleaning the type keys or electrical contacts. The tailor and laundry worker may be subject to carbon monoxide from defective flatirons and inadequate ventilation. Where the gainful occupation is itself safe, and is carried on in a hygienic environment, the patient not infrequently becomes a victim to unsuspected exposure incident to pursuits carried on as under guise of hobbies, recreation, or household duties.

Medical diagnosis requires meticulous detective work, for each patient has his own particular occupation, profession, work environment, or hobbies which will suggest to the physician special lines of inquiry. Initial evaluation of occupational factors belongs to all physicians, and, where indicated, further study may be relegated to the industrial physician and others with added experience with specific occupational diseases.

Workman compensation legislation is now na-

tionwide. This places before the medical profession an inescapable responsibility to render to patients a medical diagnosis which includes a balanced consideration of the factors of employment or occupation which may produce or aggravate medical conditions.

Occupational History

The initial approach in the diagnosis of occupational disease is similar to that used for any disease. History taking is all-important. It must be detailed and contain a historical summary of all the occupational activity. This includes attention to the exact nature of the operation in which the patient is currently engaged, and the work activities carried on by others in the immediate work environment. In some instances of suspected chronic poisoning, the occupational history should cover the patient's entire work history starting with his first gainful employment, for materials such as silica dust or manganese dioxide may produce signs and symptoms after exposure has terminated.

Many workers are prone to classify themselves by giving a title. Such titles as "miner" or "welder" do not necessarily reveal the actual nature of the work performed. To note merely that a worker is a miner does not constitute an occupational history unless specific job, duration of service, and type and location of the mine are also recorded. A welder, on the other hand, should be asked the nature of the metals that he burns, the type of welding arc used, and questioned as to the extent and kind of protective control measures in use on the job.

The patient commonly makes his own diagnosis which is presented to the physician with the words: "I have been poisoned by the fumes in the shop." Inquiry frequently reveals that the patient has little or no knowledge of the composition of the "fumes" or of the nature of the materials used in the job. The physician will do well to heed the opinion of his patient but reserve "diagnosis" until the exact nature of the materials and processes encountered by his patient are known. It is equally fallacious to assume that where known toxic materials are present or involved all disability can be attributed to this cause.

Materials and Processes

If the occupational history, together with the symptomatology, suggests a toxic exposure, further diagnosis will be facilitated if the concentration

DIAGNOSIS OF OCCUPATIONAL DISEASE—MALLERY

and composition of the material or mixtures of compounds is established. Various agents which fall under suspicion in the work history may prove to be relatively or completely inert in the form, concentration, or duration of exposure encountered. Many occupational diseases are insidious in their onset but will, as a general rule, develop while the workman is still exposed to the causative agent. Silica and benzol, however, represent materials which may not produce clinical manifestations until many years after initial exposure.

Concentration and Duration

The ability of the body to detoxify noxious agents is dependent in part on the rate of absorption of the material in question. The absorptive rate in turn is related to the route of entry into the body and varies widely—be it skin, gastrointestinal, or respiratory tract—and will likewise be influenced by the physical state of the noxious agent, its concentration, and by the type and duration of exposure. Daily exposures of low concentrations of benzol over a long period of time may cause severe depressions of the hemopoietic system, while high concentrations produce rapid narcosis without significant effects on the blood-forming organs. Fumes of the oxides of nitrogen may precipitate a fatal pulmonary edema in higher concentration, while only slight irritation of the mucous membranes of the upper respiratory tract follow repeated low grade exposure.

Functional and Structural Pathology

For each toxic material, a specific reaction or pattern is predicted. Some substances primarily affect the respiratory tract, others the central nervous system, the blood-forming organs, or the kidney or liver. Once a particular agent has come under suspicion, specific functional tests or diagnostic tools come to mind to attack and pinpoint potential resultant pathology.

Clinical and Analytical Laboratory Methods

Medical diagnosis would be greatly facilitated in occupational disease if it were possible to demonstrate the presence of most toxic materials in the body fluids. Unfortunately, relatively few agents can be easily identified; for many others the analytic method is either not readily available, or the laboratory approach is through non-specific tests. Many of the volatile substances are rapidly eliminated from the body so that the interval between exposure and laboratory analysis

modifies or nullifies the value of the procedures available. Laboratory data, however, if used in conjunction with the occupational history and clinical findings, provide important and valuable confirmatory evidence in arriving at a correct diagnosis. For example, lead and mercury may be recovered directly from body fluids, while the arsenic content can be determined in the feces and in the hair. The intensity of the exposure to benzene and other materials, however, may be inferred from the determination of its metabolites such as the urinary ethereal sulphate ratio. Carbon tetrachloride, for which there are no specific qualitative tests in blood or urine, may be inferred if exposure history is correlated with clinical laboratory tests which reveal impaired liver function. Mercury can be detected directly in the urine, or because of its known proclivity for producing kidney damage, its presence may be inferred if abnormal urine findings and functional tests accompany occupational contact.

Indirect Evidence

The finding of similar disability in other persons subject to the same working conditions lends indirect support to the likelihood that an occupational origin may be the basis of disability. However, not all similarly exposed personnel seem to be affected equally. Individual susceptibility will modify the response, as will specific sensitization, coincident disease and organ damage, sex and racial differences.

Plant Knowledge

Occupational disease diagnosis requires some knowledge of the health hazards associated with a particular work environment. The physician will profit from a firsthand acquaintance with the plants of his own community in which his patients spend their working hours. It is often impractical for the general practitioner to know the entire industrial field, nor is it necessary. Further, he is not expected to be trained in industrial hygiene or engineering, nor to be able to use the various collecting and sampling devices used in evaluating the concentration of dusts, vapors, or gases. A plant visit, however, provides the physician with insight into the actual work environment in which his patients are placed and serves to assist him to evaluate the influence of the job on the health and disabilities of his patients.

(Continued on Page 639)

Detroit Physiological Society

MEETING OF MARCH 19, 1953

Experiences with Antimetabolites for Nicotinic Acid

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Pyridine-3-sulfonic acid and 3-acetylpyridine are structurally related to nicotinic acid and become increasingly toxic in dogs depleted of this vitamin. The two compounds have, therefore, been classified as antivitamin. After preliminary metabolism experiments with both compounds (J. Biol. Chem., 188, 343 (1951), 3-acetylpyridine (3-AP) was studied in detail. Dogs receiving 3-AP excreted large amounts of nicotinic acid and biologically active derivatives of this vitamin. Tracer studies in which 3-AP was tagged with C¹³ in the carbonyl group showed that nicotinic acid and derivatives thereof arose directly from 3-AP (J. Biol. Chem. 198, 573 (1952)). The toxicity of 3-AP in dogs partially depleted of nicotinic acid may therefore be due to impairment of the mechanism for oxidizing 3-AP to nicotinic acid and other compounds. Further *in vivo* and *in vitro* experiments have given additional information concerning the course and site of metabolism of 3-AP. (Federation Proceedings, 12, 176 (1953), Abstract 572).

Circulatory Shock Syndrome and Acute Cor Pulmonale Caused by Different Kinds of Acute, Disseminated Pulmonary Vascular Occlusions

C. L. SCHNEIDER, *Wayne University College of Medicine*

R. M. ENGSTROM and A. A. CINTRON-RIVERA, *Wayne County General Hospital, Michigan*

Acute and widespread occlusion of the pulmonary vascular bed was caused in dogs by intravenous injection of extracts of tissue thromboplastin.

This initiates massive and disseminated coagulation within the blood stream, and is believed to result in a kind of submicroscopic "fibrin embolism"; i.e., in formation of fibrillae of fibrin, throughout the circulating blood. As an end result, fibrin builds up microscopically demonstrable, intravascular occlusions. These occlusions have a characteristic structure and have a predilection to form in the pulmonary arterial bed. In the present investigation,* blood pressures were recorded through catheters in the pulmonary artery and in the aorta. The pulmonary arterial pressure rose to 50 mm. of mercury; the systemic pressure fell to shock levels. Under direct observation the right heart dilated excessively and the left heart filled inadequately.

In comparative studies, experimental meconium embolism (in which there is an over-all inhibition, rather than an acceleration, of coagulation) caused similar, extreme blood pressure changes and acute cor pulmonale. Consistent with the preformed nature of the meconium occlusions, the blood pressure changes were almost instantaneous. By contrast, the pressure changes initiated by "fibrin embolism" required more than one minute to develop, a time lag consistent with the time needed for building up of the fibrin occlusions. Electrocardiographic recordings in both of these kinds of disseminated pulmonary vascular occlusions were consistent with development of acute cor pulmonale. Fibrin occlusions diagnostic of fibrin embolism have been observed postmortem, after maternal abruptio placentae and after eclampsia. It follows that disseminated fibrin occlusion of the pulmonary arterial bed, and resultant acute cor pulmonale, may be a cause of the circulatory failure that is sometimes observed clinically in these acute disorders of late pregnancy.

*This investigation was supported in part by the Medical Research and Development Board, Office of the Surgeon General, Department of the Army, Contract No. DA-49-007-MD-194.

Editorial

MICHIGAN STATE MEDICAL SOCIETY ANNUAL SESSION

Pantlind Hotel-Civic Auditorium, Grand Rapids

Wednesday-Thursday-Friday, September 23-24-25, 1953

YOU ARE URGED TO ATTEND!

BLUE CROSS-BLUE SHIELD— AN EVOLUTION

HISTORY tells us that great crises have their great compensating reactions. Throughout the ages when a situation has arisen which seems insoluble, there has always been some development which makes us believe it is the natural sequence of cause and effect. Not much beyond the memory of our older practitioners, the trip to the hospital was the last desperate stage before the death of the patient, or so most of them feared. But new facilities and new procedures, both of medical and hospital personnel, have changed all that fear into a growing and unbounded confidence in the better chance of recovery afforded by present-day hospitals.

Progress in medical and hospital care for the alleviation of human ailments during the last two decades has been by leaps and bounds. Hospitals have now become the trusted and accepted place for the care of seriously sick people and for the study and diagnosis of disease.

Modern hospital techniques and modern medical accomplishments have improved the general health of the nation, and at the same time they have added to the cost of being ill. Each new hospital service, each new miracle drug, each improved diagnostic method has necessarily added to the costs.

Two decades ago, this country was going through a condition almost impossible for the modern person to understand. Only a few of our present active generation remember with any vividness the times when for millions there was no work except that manufactured by government and the long-time steady employment of the well-established business interests—and they were struggling to survive. Nearly 50 per cent of the people were completely dependent on doles or made work, with a pittance of remuneration. More than 45 per cent of the medical work done by the practitioners was paid for not at all, or through welfare or relief organizations. It was al-

most impossible to get a patient into a hospital, unless he was of independent means.

We were in a dilemma which had to be solved. The solution came, as it always must in such circumstances, from the grass roots, and almost spontaneously. The concept of prepayment for medical and hospital care grew from the four corners. Medical societies, medical men and hospital men from every area proposed one scheme after another, with voluntary prepayment most favored.

In Michigan, workers in various county medical societies and on several State Medical Society committees were among those with ideas, and willing to work them out. In Calhoun County, a program was adopted to give complete medical service based on the financial report of a Michigan State Medical Society committee study, only to find just before launching the plan that it contravened the State Insurance law. Eventually, by the passage of enabling legislation and through co-operation of all those interested, Michigan Medical Service was formed. Michigan Hospital Service had preceded Michigan Medical Service by about a year, using the prepayment voluntary service concept. Michigan Hospital Service was a pioneer but was not the first in that field. The prepayment program for hospitals had actually been growing in various parts of the nation, but applied to medicine it was completely unknown. In the medical field, health and accident insurance had been sold by insurance companies for many years. It did not cover our needs, and the insurance companies would not touch the plan being studied by the medical men. Michigan proposed a complete service program. In California, about six months before the Michigan plan was launched, a plan was sold which covered about the same service, but was based on a unit valuation with pro rata payments to be 100 per cent if there were enough money, and otherwise different rates. The 100 per cent payments came very late. We now know that a few county medical societies in the West had sold somewhat similar service for several years, but it had never been published. In Michigan, we were

(Continued on Page 638)

Founded on the Principle of Service

Dedication of this number of THE JOURNAL to Michigan Medical Service suggests that Blue Shield is something of which we are proud; we feel it is providing a service to the public that is unparalleled in the history of the State Society. We can point with pride to the efficient management of the organization and are none the less indebted to Robert L. Novy, M.D., Detroit, for his consistent effort as president of the Service.

The President's Commission on the Health Needs of the Nation "favors this form of financing health services," but suggests devious ways of Federal subsidy to increase its comprehensive coverage. This we cannot agree with unqualifiedly; slow but steady advancement of the benefits received by the purchaser of this Service, of necessity, will have to be the course to be followed.

The sister organization, Blue Cross, also has been commended by the President's commission on "providing a fairly adequate answer to the problem of payment of hospital bills." We, of course, know this to be true; those of us older in the practice of medicine realize how much easier it is now to convince patients of the desirability of entering a hospital for adequate care (with most or all of the cost paid by insurance) than it was twenty-five years ago.

It is possible, however, to kill the goose that lays the golden egg! Over-utilization of Blue Cross benefits is a real hazard to the plan. We physicians can discourage this by not extending the hospital stay of our patients beyond necessary limits. But the patients also have a responsibility in this regard and must remember they are paying the premiums which must be continually increased if privileges are abused. The only alternative, it would seem, would be a restricted rather than a more liberalized contract which would be contrary to the concept of the plan that was founded on the principle of serving the greatest number of people at the least possible cost.

President's



Message

R. L. Novy

President, Michigan
State Medical Society

EDITORIAL

(Continued from Page 636)

formulating a completely unknown or untried form of "service insurance."

The experimentation, trial and error, and the anguish of frustration were all part of the "born-ing" process. Once started, it was of the nature of a social revolution long overdue and inevitable in its arrival. Once the concept was accepted by both a crusading and stabilizing group of evangelistic doctors, the ultimate goal *would* and *did* come even in spite of most heartbreaking opposition.

In October, 1947, the late Senator Vandenberg met with a group of men representing the Michigan State Medical Society and Michigan Medical Service, at his request, to learn more about what we in Michigan were doing "to forestall socialized medicine." After a complete afternoon of shrewd searching questions, he said, "You in Michigan have established one of the great public trusts of the country. You have taken over fifty million dollars of the peoples' money and have spent it for them and their advantage. That is a Public Trust."

Again the June number of THE JOURNAL is devoted to our brain-child, Michigan Medical Service. We and the Service are fulfilling our public trust and our obligations in making this report to our constituents. The report is good.

PROBLEMS:

IN APRIL the Blue Cross-Blue Shield Conference was held in Hollywood Beach, Florida. This is an annual event, started about seven years ago with a small attendance, mostly plan directors, presidents and administrative officers of the voluntary prepayment plans, who met to study methods and means to improve the work of the organization: also to help in starting other plans throughout the nation. Succeeding years have seen more in attendance. Four years ago, many of the directors of the plans attended the Hollywood Beach meeting. They found the occasion both instructive and of distinct value to their own work in administering the plans. About 300 was an unexpected and almost overwhelming attendance. At the 1953 meeting, the attendance numbered well over 800 persons. This shows the interest and devotion to detail of the Board members who predominated in attendance.

There was an excellent program of prepared talks from American Medical Association Public

Relations, American Institute of Management, Industry, Labor, Economists, Administration, and the insurance commissioners of several states. Caution was sounded on every hand that over-usage or misuse might wreck the structure which had been builded to such heights. Recognition was given by Labor, Industry and Government to the development of the voluntary prepayment method of meeting ever-increasing health costs.

Specifically, mention was made that these plans are not intended for total and unlimited health service, but primarily to care for the catastrophic seizure which might wipe out a family's savings. The simple office call and diagnosis are not intended to be covered. Neither is the hospital meant to be a refuge for unwanted older people so the family can have a weekend party or trip. (This has been done.) Over-staying in the hospital also adds to the costs, particularly in these days when the average costs of hospital stay approach \$25.00 or \$30.00 a day. One additional day in the hospital for only a hundred of the many thousands of patients costs \$3,000.00. Overutilization and over-staying would soon wreck the plan.

A little thought on the part of the attending doctor will easily suggest other misuse of the plans which have meant so much to the stability of the hospitals and the assured income of the doctors who take care of our sick people. Blue Shield or Blue Cross plans are not an impersonal insurance company with money to spend. They are our own personal bulwark against some social changes with which we have been threatened, and which may come again if social conditions change.

Caution was sounded that some serious problems of the voluntary health prepayment plans must be solved while there is a sympathetic administration in Washington. There is a growing demand that financing plans for the unemployed or indigent should be solved to give them the same benefits enjoyed by voluntary subscribers. There should be consideration of plans to care for the aged after they have ceased to work, and are living on retirement funds or allowances which will not be sufficient to pay premiums.

In our present economic system, a considerable part of hospitalization and medical costs are borne by a third party such as Blue Cross, Blue Shield, insurance, retirement funds. The whole concept of hospital financing is changed. Wealthy persons used to provide for the indigent by endowments, but now that class of people is an entirely different

EDITORIAL

worry. There are now no philanthropists who donate to charity hospitals. There are few charity hospitals. The cost of the indigent goes, as it should, to governmental agencies. But these agencies do not pay the full charge of the hospital, only a proportion, so the prepayment funds and the paying patients must of necessity carry the extra charge.

Other loads on the financial setup of the hospitals are the training courses for interns, house physicians, nurses and technicians. All these expenses are now the responsibility of the teaching hospitals, and therefore cause additional charges to the paying or prepaid patient. That is all to the good for teaching purposes, but the question is being asked, "Is that a proper charge against the patient; against Blue Cross?"

These remarks will point to some of the problems to be solved. Much thought is now being given to these and other measures.

Michigan Hospital Service, with the co-operation and guidance of the Michigan State Medical Society and the assistance of Michigan Medical Service, has a joint committee studying hospital admissions over a period of time, looking for over-utilization and abuse. Over 7,000 admissions have been reviewed. It is hoped this may reach at least 14,000 before the September meeting, so a comprehensive report may be made.

Constant sympathetic co-operation on the part of the users of medical and hospital service is a basic need. The idea must be recognized that these plans are our own creatures and possessions—they are not alien, but self-made and self-administered. They must not fail, else the penalty on the Doctor of Medicine and on his practice is too great.

AIR POLLUTION

(Continued from Page 630)

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DIAGNOSIS OF OCCUPATIONAL DISEASES

(Continued from Page 634)

Records

Medical records must contain the accurate details of the occupational history, physical findings, and the source from which the environmental information was obtained.

The medical record, to be of service to the patient, the medical profession, and other interested parties, must contain facts to the end that the medical opinion and diagnosis stem from recorded information which is consistent with acceptable medical facts. In all disease, but especially in occupational disability, is this true, wherein medical testimony is vital to properly establish legal responsibility.

Summary

A symptomatic approach to occupational disease diagnosis follows lines common to all diagnosis. Particular emphasis and inquiry is directed to specific agents and conditions known to produce disabilities, and to the search for such materials or environmental circumstances where occupational disease is presently suspect. Differential diagnosis is everywhere to be considered. In stepwise fashion, the following inquiries and procedures merit consideration:

1. Accurate job history.
2. Complete and exact information regarding all materials and the conditions of alleged exposure.
3. Factual medical evidence of structural and functional impairment.
4. Supportive clinical and analytical laboratory data.
5. Final medical opinion to rest on the combined clinical and laboratory picture as supported by recorded facts.

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A BLUE SHIELD REPORT to the DOCTORS OF MICHIGAN

WASHINGTON BLVD. BUILDING . . . DETROIT 26, MICHIGAN



TO THE DOCTORS OF MICHIGAN:

On behalf of the Michigan Medical Service Board of Directors, I would like to take this opportunity to thank the Michigan State Medical Society for again permitting Blue Shield to report to the Doctors of Michigan through the pages of The Journal. It is most gratifying to have this opportunity each year, and especially pleasing this year when our section of The Journal deals with a report of a most successful year.

The expansion of Blue Shield coverage, its past record, its present stature, are all fruits of the labor of each Doctor in the state. I share with each of you a deep sense of pride.

For the past decade, we have had the opportunity of watching the Blue Shield Plan in Michigan take its place among other fields of endeavor as leaders.

On the pages which follow, Michigan's Blue Shield Plan presents the facts which support the premise that YOUR Plan is the leader in the nation. There are but two basic conclusions I would point out to each of you:

First, Blue Shield in Michigan is no longer a nebulous organization, but rather it is the leading Plan of its kind in the world.

And second, the strength and future of the Plan rests solely with each of you. The strength rests in your support and cooperation which you have enthusiastically demonstrated. The future of the Plan rests with the conscientious doctor who carefully evaluates his patient's need for care which becomes the responsibility of the Plan.

The basic philosophy of Blue Shield has not changed. The Plan began as a means for individuals to prepay necessary medical and surgical care. To deviate from this premise is to invite disaster.

The people of Michigan have placed their trust in your guidance, your cooperation and your professional ability.

R. L. Navy

President, Michigan Medical Service

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 Director, University Hospital, Ann Arbor
 RALPH N. LONG
 Assistant Comptroller, General Motors Corporation
 R. L. NOVY, M.D.
 Delegate, American Medical Association
 E. A. OAKES, M.D.
 Past Speaker, MSMS House of Delegates
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 Section Delegate, AMA—Past President, MSMS
 W. C. PERDEW, D.D.
 Superintendent, Bronson Methodist Hospital, Kalamazoo; President Elect, MHA
 JOHN REID
 State Commissioner of Labor
 PHILIP RILEY, M.D.
 Former Councilor and Speaker, House of Delegates, MSMS
 E. F. SLADEK, M.D.
 Past President, MSMS
 W. I. STODDARD
 Senior Vice President, Michigan National Bank, Grand Rapids
 ARCH WALLS, M.D.
 Past President, WCMS
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The Report

FINANCIAL STATUS

In accordance with the Act of the Legislature under which the Michigan Medical Service operates, the Department of Insurance examined the books and records of the company as of December 31, 1952. The following Balance Sheet and Income Statement reflect the results of this examination.

Assets as of December 31, 1952, totaled \$10,881,584.62 or an increase for the year of \$1,333,857.84. Of these assets, 64.19 per cent were invested in United States Government Securities and 5.87 in real estate purchased as a future home office of Blue Cross-Blue Shield.

Liabilities amounted to \$5,399,355.77.

The largest single liability is for professional services rendered to subscribers, amounting to \$3,713,639.00. This includes an estimated liability for services rendered but not as yet reported, which is thought to be ample.

The Reserve for Contingencies as of December 31, 1952, increased by the net income for the year \$1,217,399.23, totaled \$5,482,228.85, which is available for any unforeseen events which may occur. This amounts to \$1.99 for each subscriber as compared with \$1.79 on December 31, 1951. This \$5,482,228.85 in the Reserve for Contingencies amounts to approximately three times the average monthly monetary value of the services rendered in the year ending December 31, 1952.

Income from Subscription fees during the year amounted to \$24,633,715.85 compared with \$21,145,603.20 for the year 1951.

Professional services to subscribers for the year

amounted to \$21,304,641.72 as compared with \$17,531,479.72 for 1951.

Eliminating the income from the Veterans Administration since inception of the program in 1946, \$7,415,258.99, which covers payments for services of \$6,841,106.61 and administration expense of \$574,152.38, a gain and loss statement from March 1, 1940, to December 31, 1952, is as follows:

Subscription Fees Earned	\$109,208,563.57	100.00%
Services Rendered to Subscribers	92,420,490.33	84.63%
**Administration Expense	11,844,669.83	10.84%
Income from Operations	4,943,403.41	4.53%
Investment Income and Miscellaneous	538,825.44	.49%
Net Income	\$ 5,482,228.85	5.02%
**Administration Expense		
Michigan Medical Service Expense	\$ 4,661,309.01	4.27%
Michigan Hospital Service Expense for Solicitation, Collection and Record Keeping	7,183,360.82	6.57%
	\$ 11,844,669.83	10.84%

The following tabulation shows the Assets, Liabilities, and Reserve or Deficit as at each date shown from the \$10,000.00 advanced by the Michigan State Medical Society to start the organization to its \$10,881,584.62 in assets as of December 31, 1952..

	Assets	Liabilities	Reserve
Feb. 1, 1940.....	\$ 10,000	\$ 00	\$ 10,000
Dec. 31, 1940.....	144,604	99,806	44,798
Dec. 31, 1941.....	320,192	422,546	102,354*
Dec. 31, 1942.....	263,105	702,833	439,728*
Dec. 31, 1943.....	427,916	564,159	136,243*
Dec. 31, 1944.....	1,197,372	885,810	311,562
Dec. 31, 1945.....	1,656,821	961,646	695,175
Dec. 31, 1946.....	2,300,431	1,049,100	1,251,331
Dec. 31, 1947.....	2,896,797	1,387,740	1,509,057
Dec. 31, 1948.....	3,823,946	1,884,878	1,939,068
Dec. 31, 1949.....	3,657,773	2,410,749	1,247,024
Dec. 31, 1950.....	6,479,826	3,919,706	2,560,120
Dec. 31, 1951.....	9,547,727	5,282,897	4,264,830
Dec. 31, 1952.....	10,881,584	5,399,355	5,482,229

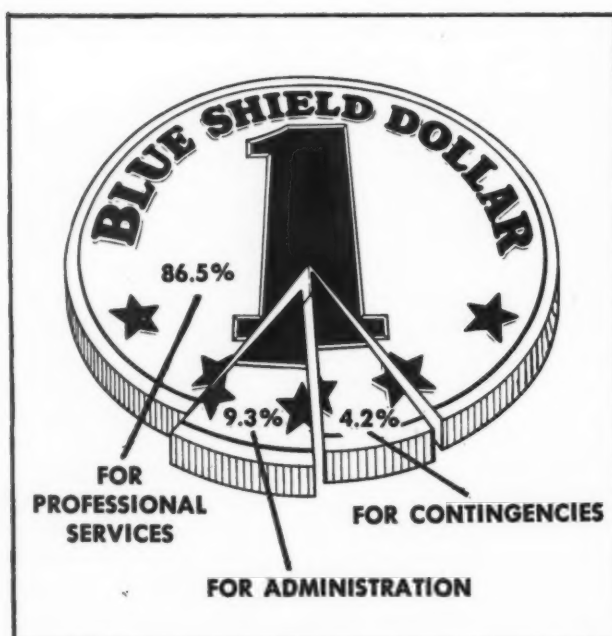
*Deficits

BALANCE SHEET

As at December 31, 1952

Assets	
U. S. Government Securities	\$ 6,984,810.64
Cash in Banks and on Hand	2,483,487.19
Subscription Fees Receivable	76,314.96
Interest and Rents Accrued	65,954.77
Accounts Receivable, Veterans Administration	111,133.30
Home Office Real Estate	638,375.53
Other Admissible Assets	521,508.23
	\$10,881,584.62

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THE REPORT

Liabilities

Reserves for:

Payments for Services Rendered	\$ 3,713,639.00
Subscription Fees Unearned	1,596,442.47
Taxes, Expenses, and Sundry Accounts Payable	89,274.30

Total Liabilities\$ 5,399,355.77

Reserve for Contingencies:

Balance, December 31, 1951\$4,264,829.62

Net Income for the Year 1,217,399.23

5,482,228.85

\$10,881,584.62

STATEMENT OF INCOME

For the Year Ended December 31, 1952

Income Earned:

Subscription Fees\$24,633,715.85

Veterans Administration and Other Fees 1,054,317.52

\$25,688,033.37

Costs and Expenses:

Services Rendered to Subscribers\$21,304,641.72

Services Rendered to Veterans 974,143.00

Salaries 621,629.24

Services of Michigan Hospital Service 1,382,938.75

Other 361,616.03

Total Costs and Expenses 24,644,968.74

Income from Operations 1,043,064.63

Interest and Rents Earned, Net 174,334.60

Net Income Transferred to Reserve for Contingencies\$ 1,217,399.23

PAID FOR PROFESSIONAL SERVICES

	Med.-Surg. Plans	Veterans Plan	All Plans
1940	\$ 172,115.00		\$ 172,115.00
1941	789,254.88		789,254.88
1942	2,208,623.42		2,208,623.42
1943	2,876,547.90		2,876,547.90
1944	3,437,265.50		3,437,265.50
1945	4,155,422.68		4,155,422.68
1946	4,720,963.05	\$ 385,316.85	5,106,279.90
1947	5,423,613.66	1,130,976.03	6,554,589.69
1948	6,102,443.37	1,023,468.87	7,125,912.24
1949	9,604,199.33	1,172,794.28	10,776,993.61
1950	11,411,160.10	1,146,261.80	12,557,421.90
1951	16,365,701.34	1,008,145.78	17,373,847.12
1952	21,439,541.10	974,143.00	22,413,684.10
	<u>\$88,706,851.33</u>	<u>\$6,841,106.61</u>	<u>\$95,547,957.94</u>

MEDICAL CARE PROTECTION GAINS

As of December 31, 1952, enrollment in the Blue Shield Plan was 2,748,923 subscribers. We continue to grow but the most significant fact in our growth is the spectacular enrollment under our Medical Care Plan.

Just four and a half years ago, on June 30, 1948, there were only 27,442 persons covered for

JUNE, 1953

both medical and surgical benefits. Today, we have 1,385,790 persons covered for medical and surgical benefits—an increase in excess of 1,350,000 persons.

The Blue Shield Package Plan of Medical and Surgical Care provides not only the same surgical plan, but in addition provides for payments to the doctor for medical care he renders to patients in the hospital for illness not involving surgery. Such illnesses might be poliomyelitis, pneumonia, diabetes, heart ailments, which according to recent statistics account for nearly one-third of all hospital admissions at the present time.

A Medical Care Plan, which included home and office calls, was offered in the earlier days of the program but proved actuarially unsound and was withdrawn in 1942. In 1945, our present Medical Care Certificate was again offered to the public, but the benefits were restricted to medical care in the hospital only.

Since our prior experience had been unfavorable, enrollment requirements for the Medical Care Plan were set very high and, consequently, the enrollment progress was slow. During the years 1948, 1949 and 1950, much study and research were carried on until we felt the benefits under the in-hospital Medical Care Plan could be maintained at the established subscription rates. It was at this time Michigan Medical Service found it necessary to increase the subscription rates of the Surgical Only Plan because of a rapidly rising rate of utilization. A ruling was made that our new group enrollment requirements for the Medical Care Program would be liberalized and that those groups who were presently enrolled under the Surgical Only Plan would be given the opportunity to transfer their coverage to the Medical Care Plan at the established rates rather than to continue under their Surgical Only Plan and be forced to pay the increased subscription rates announced at that time.

A review of the accompanying chart will show the effects of that decision as of June 30, 1952. We not only enrolled a greater number of subscribers under the Medical Care Plan than heretofore, but thousands of subscribers who were then enrolled for Surgical Only protection transferred their coverage to the Medical Care Plan. This is clearly indicated by the loss of subscribers under the Surgical Only Certificate beginning in the year 1950, whereas enrollment in the Plan as a whole continued to rise.

Enrollment in Blue Shield, with the exception of our non-group enrollment and a few other exceptions (Federal employes, professional groups, et cetera), is permitted only to groups of five or more persons having a common employer and where payroll deductions for the monthly subscription rates can be arranged. As of December 31, 1952, we have 12,863 such groups covering 2,381,047 persons.

THE REPORT

In February, 1951, the new \$5,000 Income Limit Certificates were offered to the public for the first time. Since that date, we have enrolled 1,639 groups covering 148,986 persons under these new \$5,000 Income Limit Certificates. Some of these groups are new to Blue Shield. Others are groups that were formerly enrolled under the \$2,500 Income Limit Certificate, but desired the higher benefits provided under the new \$5,000 Income Limit Certificate.

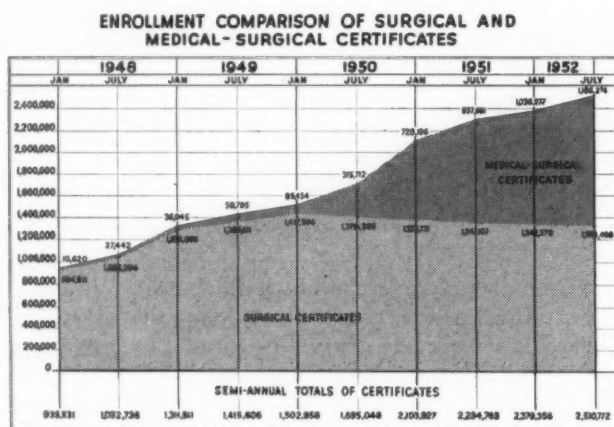


Chart 1.

This new certificate continues to become increasingly popular with both large and small groups. Groups enrolled under this type of certificate range from a large industrial firm with thousands of employees to small manufacturing plants and trade groups with as low as five to ten employees. All classes of businesses seem to be interested in this type of contract, since we have enrolled such types of business as banking and brokerage, labor organizations, public utilities, hotels, restaurants, retail organizations of all kinds, as well as hundreds of manufacturing plants.

Our requirements for enrollment of new groups, regardless of the type of benefits applied for, may be of interest. We require 75 per cent of the employees to apply for coverage before the groups are accepted for enrollment in Blue Shield. This applies to those groups having 15 or more employees. Where the employment is less than fifteen, the requirements are as follows:

Groups of 5 employees	All must enroll
6 to 11 employees	All but 1
12 employees	All but 2
13 or 14 employees	All but 3

Periodically, all groups are resolicited and employees who had not previously enrolled, are given the opportunity to apply for coverage. Here again, certain requirements must be met before applications are approved.

WORLD LEADERS

Chart 2 reflects our over-all enrollment without regard to a breakdown of any kind. It simply tells the story that as of December 31, 1952, we have 2,748,923 persons enrolled in the Michigan Blue Shield Plan. It is estimated the population of the State of Michigan is approximately 6,435,000 persons. Consequently, over 43 per cent of the residents of this state are now enrolled in your Plan.

We have especially emphasized the year 1948, at which time your program became the first Blue Shield Plan in the world to enroll 1,000,000 persons. For this outstanding achievement, the Michigan Plan was awarded a plaque by the Blue Shield Medical Care Plans on October 27, 1948, at the Annual Conference of the Blue Shield Plans.

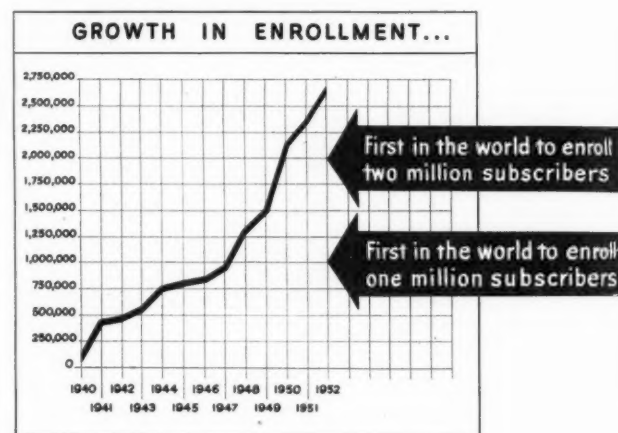


Chart 2.

Your Plan continued to have a steady growth and once again Michigan led the world by enrolling its 2,000,000th subscriber in the year 1950. Again a plaque for outstanding achievement was awarded Michigan Medical Service at Detroit on January 21, 1951.

During the last calendar year, 369,567 persons were added to our enrollment. The enrollment representatives continue to conduct an extensive campaign to convince the buying public of the necessity for our voluntary non-profit type of pre-paid Medical Care Program. Their success is evidenced by the fact that today 95 per cent of the people in Michigan who are protected by Blue Cross prepayment Hospital Benefits are also protected by either Blue Shield Surgical Only coverage or Medical-Surgical coverage.

We feel the public has approved the principles of Blue Shield as shown by the growth of the Plan through the years.

It is our responsibility to the sponsors, the Doctors of Michigan, to offer the residents of

THE REPORT

Michigan the best possible prepaid Medical Care offering best possible benefits, at the lowest possible subscription charges, in keeping with a sound financial condition.

EVERYONE HAS AN OPPORTUNITY TO ENROLL

Everyone in the State of Michigan has now had two opportunities to enroll in Blue Cross-Blue Shield through our Non-Group enrollment.

The availability of Blue Cross-Blue Shield to the individual was made possible by the creation in 1945 of the Community Relations Department. Over the years, numerous methods have been used to make our services available to those people who, for various reasons, may not obtain Blue Cross-Blue Shield through their places of employment. The latest method used was a state-wide campaign. By the use of this technique, which required meetings with doctors through their societies, with medical auxiliaries, hospital auxiliaries, the use of considerable newspaper advertising, radio and television, we were able to reach the entire state population in one concerted effort known as Blue Cross-Blue Shield Statewide Non-Group Campaign.

The need for presenting the Blue Cross-Blue Shield story to the general population has long been recognized, and numerous attempts have been made to do the job properly. Perhaps one of the best methods was developed this last year through the adoption of a series of slides in combination with a running commentary by a representative of the Non-Group Department. These slides were shown at more than thirty meetings which were attended by well over 1,500 people. Attendance at these meetings consisted of members of luncheon clubs, women's auxiliaries, and labor groups. The response as a result of the meetings was most gratifying.

The 1952 campaign was planned to last approximately three months, and was handled in two phases: (1) educational, and (2) enrollment. The educational part of the campaign lasted for a period of approximately one month and was followed immediately by activity through the various branch offices.

The non-group campaign of 1952 again resulted in our obtaining a large number of new groups in addition to the thousands of individual applications for Blue Cross-Blue Shield.

It is most interesting to note that during our non-group campaign, many inquiries are received by the Non-Group Department from employers inquiring about the procedure and requirements for enrolling in Blue Cross-Blue Shield.

Evidently, these inquiries are prompted by an employe approaching his employer concerning such enrollment as a result of the publicity cam-

paign or no doubt in some instances by the interest of the employer himself.

All such inquiries are immediately referred to the enrollment representative who is in charge of the particular area from which the inquiry originated. The inquiries are followed up, for the most part at least, by personal calls and as a result of this procedure a great many subscribers are enrolled on a group basis.

As of December 31, 1952, there were 44,496 contracts in force under the Non-Group Plan, representing 95,491 subscribers.

This Department is already laying the ground work for the 1953 campaign, and will be most grateful for the continued help of the members of the Michigan State Medical Society.

PROTECTION FOR THE RURAL FAMILY

The report on rural enrollment includes both the Farm Bureau and Grange organizations. These two organizations are best prepared to co-operate with us on enrollment problems because they have strong state-wide personnel as well as district representatives and county organizations.

The official unit which actually enrolls its members is the Community Discussion Group of the Farm Bureau and the Subordinate Grange of the Grange organization. Enrollment is based on the actual membership of each such group as certified to us by an officer of each group. Our regular group percentage applies to these groups which have ten to twenty-four members on a family unit basis, but only 60 per cent is required of groups having twenty-five or more members. Practically all rural groups, regardless of membership, now enroll over 75 per cent during their initial enrollment.

New enrollment in the year ending December 31 increased sharply over the previous year. The totals on billings as of December 31 for both Farm Bureau and Grange groups was over 34,000 contracts, representing 100,624 members. This was an increase of approximately 20 per cent. Over 90 per cent of the total enrollment is for the benefits of both Michigan Hospital Service and Michigan Medical Service.

The largest part of the rural enrollment is within the Farm Bureau organization, which accounts for about 31,000 of the total number of contracts. This represents about 60 per cent of their total statewide membership and about 75 per cent of the members eligible through discussion groups. The percentage enrollment of eligible members of subordinate granges is approximately 75 per cent, but the percentage of total Grange memberships in the state is only about 30 per cent. Steps have been taken to improve the organization of enrollment in the Grange.

THE REPORT

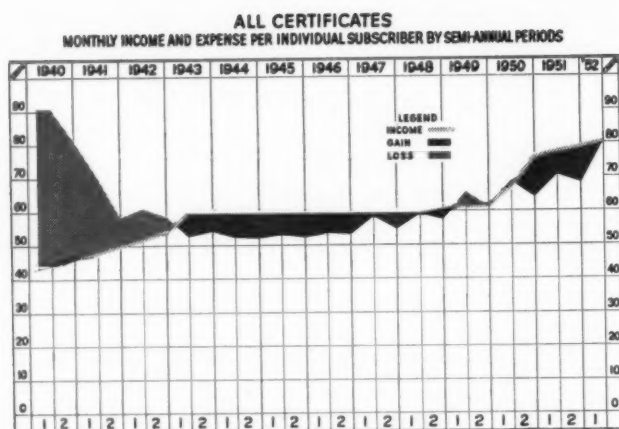


Chart 3.

THE VETERANS HOME TOWN CARE PROGRAM

The Veterans Home Town Care Program was developed shortly after the end of World War II. At that time the Veterans Administration was not equipped to provide the necessary medical services to the large number of veterans with rated service-connected disabilities.

After many preliminary discussions and planning sessions, Michigan Medical Service, acting as intermediary for the Michigan State Medical Society, entered into contract with the Veterans Administration to provide medical care to eligible veterans, giving the veteran his own choice of physician.

Since the inception of this program, rapid strides were made to produce efficient methods enabling the veteran to get prompt care and attention. Much of the paper work was reduced, and payments to physicians were made promptly. At the present time between 7,000 and 8,000 veterans are seen each month by their own doctors.

The method employed enabling Doctors of Medicine to receive reimbursement for their services is quite simple. They need only to return the combination authorization report form at the end of the month or upon completion of a series of treatments, whichever occurs first, on which they record the number of visits made (by date) and the type of treatments provided. This is the only form of statement required from the doctors, which of course eliminates the necessity of his regular monthly statements. As a result of the returned completed reports of medical services rendered to December 31, 1952, payments totaling \$6,841,106.61 have been made with a monthly high of \$121,312.25 being made during the month of March, 1950.

INCOME AND EXPENSE VARIATION

In March, 1940, Michigan Medical Service issued its first certificates. Two types of certificates were issued at that time—one of which included home and office care. Subscription rates for these certificates were based on meager actuarial data.

It was soon found that the rate for full coverage in the home and office as well as the hospital was inadequate and these certificates were discontinued in 1942. It was felt that subscribers would be unable to pay the necessary high rate.

Subscription rates on the \$2,500 Income Surgical Contract were increased in 1941, 1942, and again on March 1, 1950. On May 1, 1945, the \$2,500 Medical-Surgical In Hospital certificate was first issued to be followed on February 1, 1951, with the \$5,000 Income Surgical contracts and Medical-Surgical contracts.

The higher income per individual for the year 1950 shown in Chart 3 is primarily due to the increase in rates on the \$2,500 Surgical certificate and greater enrollment in the \$2,500 Medical-Surgical certificate. The still greater increase to 79 cents in the last half of 1951 and 80 cents in 1952 reflects the trend to enroll under the \$5,000 certificates and still greater enrollment under the \$2,500 Income Medical-Surgical certificate in preference to the \$2,500 Surgical certificate.

Costs, including Service Fees and Administration Expense per individual, were extremely high in the early years when enrollment was small but was increasing rapidly. This cost declined during the war years and we believe reflects the tendency of busy people to defer needed medical attention. During this period only the \$2,500 Surgical Certificate was issued.

With the introduction of the \$5,000 Income Certificate with higher fees for professional service, costs have gone still higher in the latter part of 1951 and the first part of 1952.

MORE MEMBERS ARE USING BLUE SHIELD PROTECTION

From 1946 on, there has been a steady increase in the Incidence Rate coupled with a reduction in the average cost of each service. This we believe is due to a liberalization of the terms of this certificate to cover a specific list of office and outpatient surgery as well as accidental injuries; a greater use of x-rays; and an increase in the number of anesthetics rendered by Doctors of Medicine.

A recapitulation showing all services per 1,000 subscribers per year compared with the incidence rate for x-rays and anesthesia is shown in Table I.

The listing in Table II shows the growth of your Plan in number of people covered. The 1940-41 enrollment in the full coverage certificate and en-

THE REPORT

TABLE I

Year	All-Services	X-Ray	Anesthesia
1943	137.64	27.53	9.88
1944	133.08	27.40	12.11
1945	140.40	31.11	13.36
1946	132.96	34.28	13.76
1947	154.56	39.37	16.09
1948	169.44	47.48	17.56
1949	194.38	58.08	17.93
1950	208.66	59.14	18.31
1951	226.42	63.92	18.34

TABLE II

Jan. 1, 1945 to Jan. 1, 1953	\$2,500 Income Certificate		\$5,000 Income Certificate		All Certi- ficates
	Surg.	Med.- Surg.	Surg.	Med.- Surg.	
1945	717,420				717,420
1946	855,540	2,695			858,235
1947	836,271	4,630			840,901
1948	924,911	10,620			935,531
1949	1,274,966	36,845			1,311,811
1950	1,417,504	85,454			1,502,958
1951	1,375,731	728,196			2,103,927
1952	1,306,758	995,475	35,621	41,502	2,379,356
1953	1,292,915	1,226,919	70,218	158,871	2,748,923

rollment in one large group where only the employed individual was protected, is not included.

With changes in medical practice, office surgery liberalization, and an increase in the number of certificates with Hospital-Medical Care, the number of services has increased more rapidly than the number of people covered. As an example: In 1950, there were 16.4 services per month under the Surgical Certificate per 1,000 people covered as compared with 20.78 services under the Medical-Surgical Certificate.

Table II gives the enrollment on the date indicated by type of certificate.

BENEFITS REACH RECORD HIGH

Observing Charts 4 and 5, it will be noted that the number of services rendered and the amounts paid to doctors for such services are grouped in substantially the same sequence as those in the

NUMBER OF SURGICAL SERVICES RENDERED
JANUARY 1, 1943 TO JUNE 30, 1952

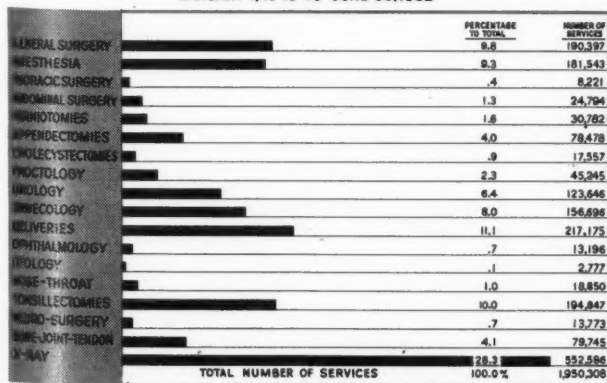


Chart 4.

PAID TO DOCTORS FOR SURGICAL SERVICES RENDERED
JANUARY 1, 1943 TO JUNE 30, 1952

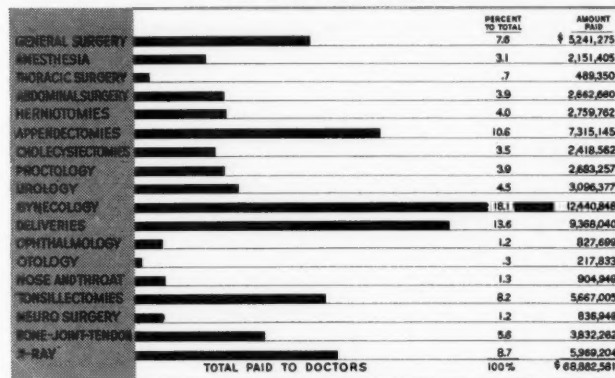


Chart 5.

Schedule of Benefits published by Michigan Medical Service.

Appendectomies, tonsillectomies, and services connected with gynecology (except deliveries) account for only 22 per cent of the total number of procedures performed, yet account for 36.9 per cent of all payments made.

For the delivery of 52,932 babies during the last fiscal year, your Plan paid to doctors \$2,414,630.00.

MEDICAL CARE PLAN

We have previously emphasized the rapid growth in enrollment under our Medical In-Hospital Care Program. We have also noted its effect on our utilization rate and on our income.

Since this program actually did not get into full swing until approximately the middle of the year 1950, the exposure and utilization was not great enough to prepare statistical data that would be of any significance. For the year 1951, however, we do have adequate information on which to report but it cannot be shown in graph or chart form because the material cannot be related to prior years. In this section, therefore, we shall confine our report to simply a statement concerning cost and utilization and compare these items under the full Medical Care Plan to those under the Surgical-Only Certificate. Table III is prepared for that purpose.

TABLE III. SURGICAL SERVICES

<i>Surgical-Only Contract</i>	
Services per 1,000 members per month.....	16.87
Average cost per service.....	\$ 32.52
Cost per 1,000 members per month.....	549.73
<i>Surgical Services only under Medical-Surgical Certificates</i>	
Services per 1,000 members per month.....	18.19
Average cost per service.....	\$ 32.67
Cost per 1,000 members per month.....	594.31

During the Fiscal Year ending June 30, 1952, your Plan paid to Doctors for services rendered for Medical Care (Non-Surgical) the amount of \$1,751,294.45. This payment represents 43,748 services involving 440,452 days of care. The Av-

THE REPORT

erage Length of Stay in the hospital for a Medical Care admission is 10.08 days.

Table IV concerns Medical Care (Non-Surgical) only.

TABLE IV. MEDICAL CARE

Number of services per 1,000 members per month.....	3.33
Average cost per service.....	\$ 40.05
Cost per 1,000 members per month.....	133.35
Days of Care per 1,000 members per month	33.95
Average cost per day	\$ 3.93
Average length of stay.....	10.04 days

Payments to Doctors for services rendered under the Medical Care Plan as outlined in our Schedule of Benefits as shown in Table V.

TABLE V

	\$2,500 Income Contract Schedule	\$5,000 Income Contract Schedule
First day hospitalization.....	\$10.00	\$12.50
Second, third and fourth days	4.00	5.00
Subsequent Days.....	3.00	4.00

Medical services rendered by the Doctor in charge of the case (not related to Surgical or Maternity Service) is limited to a total of 120 days of service between the effective date of the certificate and the first anniversary thereof or during any succeeding twelve-month period, excepting, however, Medical Services for tuberculosis or nervous or mental conditions, which is limited to a total of thirty days of such service in each certificate year.

FACTS ABOUT OUR COMPANION BLUE CROSS PLAN



K. BABCOCK, M.D.
President, Michigan
Hospital Service

Since February 23, 1940, Michigan Medical Service and Michigan Hospital Service have served the Michigan public as companion service Plans. That date marks the signing of a joint operations agreement which served to unify the efforts of these two organizations to reach the public with their services. Through this agreement, Michigan Hospital Service has assumed the following duties in behalf of both organizations:

1. Advertising and promotional activities to reach and educate all segments of the public to

MICHIGAN HOSPITAL SERVICE

DAYS OF CARE PER 1000 MEMBERS PER YEAR

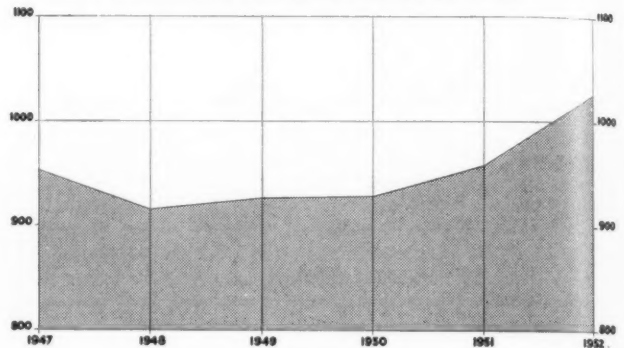


Chart 6.

the services offered through literature, the press, radio, and other similar media.

2. Performing all enrollment activities, including presentation of the plans to the employers and employees, as well as professional groups and all other eligible groups.

3. Arranging delivery of contracts and identification cards to subscribers.

4. Servicing and maintenance of contracts through sufficient personnel and branch facilities to cover the State of Michigan.

5. Establishing and maintaining records and files pertaining to every person entitled to service.

6. Handling billings to and collections from subscribers and subscriber groups.

As Michigan Medical Service offers doctors services through prepayment, so Michigan Hospital Service offers services of 201 non-profit general hospitals throughout Michigan. Through its service contracts with participating hospitals, Michigan Hospital Service offers group coverage up to 120 days and individual coverage up to thirty days per hospital confinement including the following services:

1. Full ward or semi-private room service depending upon the coverage selected by the subscriber.

2. Unlimited extra hospital services with the exception of blood and appliances.

The Michigan Hospital Service contract covers the greatest number of subscribers with the broadest benefits of any Blue Cross or competitive plan. Coupled with the Michigan Medical Service contracts which are also among the broadest available, Michigan offers the greatest combination of coverage to the largest number of people.

In testimony of the efforts and relationship of our companion plans, we can point with pride to the fact that according to available figures Michigan enjoys the highest ratio of medical-hospital contracts of any of the Blue Cross-Blue Shield Plans.

MHS Membership	MMS Membership	Ratio
2,898,954	2,748,923	95%

JMSMS

MICHIGAN HOSPITAL SERVICE

IN PATIENT ADMISSIONS PER 1000 MEMBERS PER YEAR

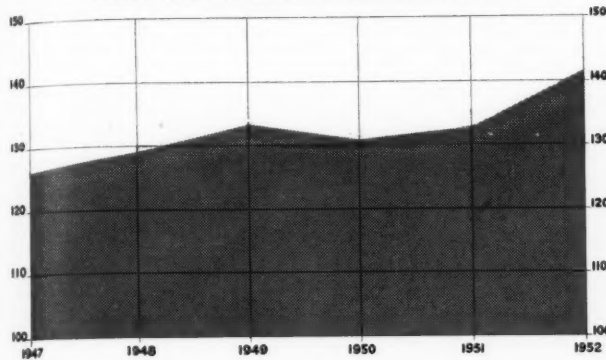


Chart 7.

HOSPITAL DAY UTILIZATION AND INCIDENCE OF ADMISSION

Utilization of bed days per 1,000 subscribers per year has risen sharply in the first six months of 1952 over the pattern of the prior five years. Figures for the years 1947-1951, inclusive, vary between 916 and 955. By sharp contrast, the figure for the first six months of 1952 is in the neighborhood of 1,060. By year end, the anticipated lower utilization for the last six months of the year may reduce the 1952 figure to 1,030 but that will still represent a 10 per cent increase over the prior five-year average.

The average length of stay per admission remains fairly stable.

The incidence of admissions had been the key item in increasing the bed day utilization. The incidence of admissions for the first six months of 1952 is 147. That may level to 142 by year end; but again is a substantial increase over the prior five-year average of 130.

The increase in utilization, as it affects economics of medical care, is further irritated by inflationary pressures which result in higher per diem operating costs in our hospitals.

There is very little we can do locally to offset the inflationary trend; however, the sharp and unexpected increase in incidence and utilization is worthy of serious study by the medical staffs of hospitals.

THE BLUE SHIELD PICTURE NATION-WIDE

Michigan Medical Service is one of seventy-eight Blue Shield Plans participating in the "Blue Shield Medical Care Plans," an association of voluntary, non-profit, medically sponsored, medical care pre-payment plans.

Michigan Medical Service was one of the nine charter members of the Blue Shield organizations in 1946 and has been active in its affairs since. Acceptance of a plan for membership in the na-

MICHIGAN HOSPITAL SERVICE

AVERAGE CONTRACT CHARGES PER CASE
IN PARTICIPATING HOSPITALS
SEMI-ANNUAL PERIODS 1945 THROUGH 1952

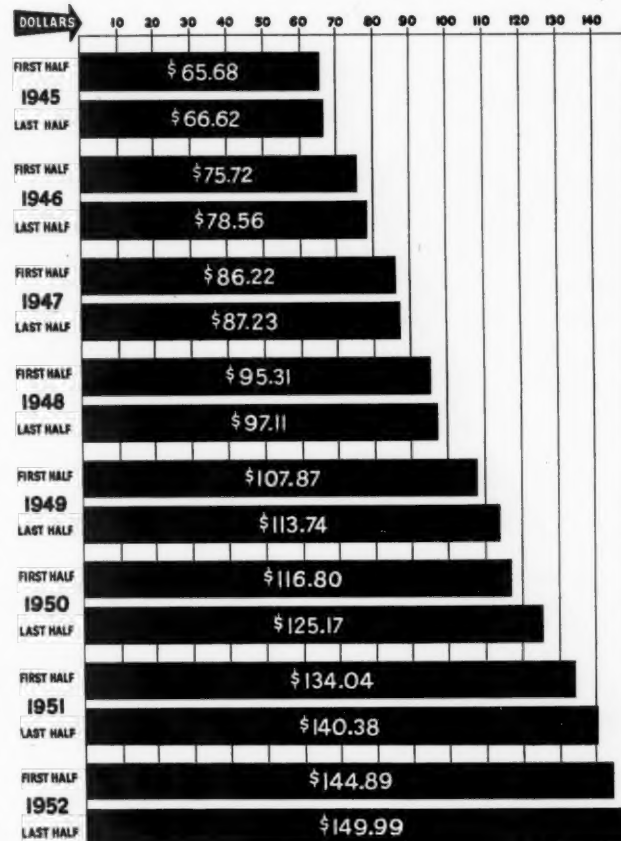


Chart 8.

tional Association is based on conformity to standards of organization and operation set up by the Council on Medical Service of the American Medical Association, and some additional requirements set up by the Blue Shield Commission.

Members of the Board of Directors and staff of Michigan Medical Service have contributed much to the work of the Blue Shield through its committees and its governing body, the Blue Shield Commission. Dr. R. L. Novy, President of Michigan Medical Service, is a member of the Blue Shield Commission, its Executive Committee, and also serves as its Vice Chairman. Jay Ketchum, Executive Vice President of Michigan Medical Service, is a member of the Commission, Executive Committee, and has served as its Treasurer.

The Blue Shield Commission is elected annually by the member Plans. Each of eleven geographical districts elects two Commissioners, one to represent the governing boards of Blue Shield Plans, and one to represent the Plan executives. In addition, there are eight Commissioners-at-Large—six of whom must be Doctors of Medicine. The

THE REPORT

Commission for the year 1952-1953 consists of the following:

Norman A. Welch, M.D.
Boston, Mass.
Frederic E. Elliott, M.D.
New York, N. Y.
F. M. Miller, Jr., M.D.
Utica, N. Y.
J. A. Daugherty, M.D.
Harrisburg, Pa.
V. K. Hart, M.D.
Charlotte, N. C.
Leigh F. Robinson, M.D.
Fort Lauderdale, Fla.
W. Harry Howard, M.D.
Hammond, Ind.
Warren W. Furey, M.D.
Chicago, Ill.
Ira H. Lockwood, M.D.
Kansas City, Kans.
Richard R. Cranmer, M.D.
Minneapolis, Minn.
Donald Cass, M.D.
Los Angeles, Calif.

Russell S. Spaulding
Concord, N. H.
John F. McCormack
New York, N. Y.
Irving P. Borsher, M.D.
Newark, N. J.
Harold V. Maybee
Wilmington, Del.
J. H. Matthewson
Huntington, W. Va.
H. F. Singleton
Birmingham, Ala.
Charles H. Coghlan
Columbus, Ohio
Kenneth K. Clark
Rockford, Ill.
Sam J. Barham
Topeka, Kans.
James O. Kelley
Milwaukee, Wis.
Samuel English
Helena, Mont.

At Large

Paul R. Hawley, M.D.
Chicago, Ill.
Charles Gordon Heyd, M.D.
New York, N. Y.
Jay C. Ketchum
Detroit, Mich.
Robert L. Novy, M.D.
Detroit, Mich.

Blue Shield membership nationally has grown at the rate of 14,385 persons every working day during 1952, a total of 3,629,363. Since organization of the national Association the growth by years is shown by the following:

December 31	Total Members
1946	1,826,719
1947	5,791,175
1948	8,911,225
1949	12,260,045
1950	16,629,596
1951	21,130,996
1952	24,770,359

In the United States, Puerto Rico and Hawaii, the Blue Shield Plans have enrolled 16.55 per cent of the population in the areas served.

The Blue Shield Plans in eleven states serve in excess of 20 per cent of the population:

Area	Per Cent
Delaware	59.45
District of Columbia	45.17
Michigan	43.14
Connecticut	30.35
Massachusetts	29.98
New Hampshire-Vermont	27.45
New York	25.55
Colorado	25.32
Ohio	22.72
Indiana	22.16
New Jersey	20.63

Payments to doctors for care of Blue Shield members has increased from \$55,161,457 in 1948 to \$208,514,177 during 1952:

1948	\$ 55,161,457
1949	79,218,673
1950	115,906,544
1951	163,055,227
1952	208,514,177

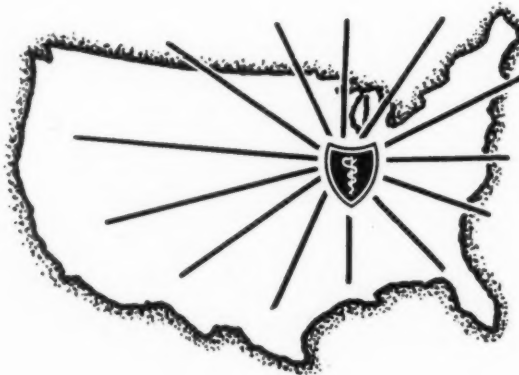
SUMMARY

Doctors of Michigan, you can be proud of the achievements and progress your Blue Shield Plan has shown in the past.

Thousands of people in Michigan are enrolling each month for the protection you are making possible for them. The record speaks for itself. Blue Shield in Michigan . . . in reality each doctor in the state . . . is blazing the trail for other parts of the nation to follow.

But let none of us misinterpret the situation. There is much to be done, more experimenting to do, and much yet to learn. The aged, the indigent and other segments of the population must be approached from a realistic point of view. More than ever before in our history as a profession will we be called upon to offer solutions, and not theories, to situations facing us. Blue Shield will be called upon more and more to offer practical answers to problems facing us locally and nationally. We must be ready for those questions.

The record of Blue Shield in Michigan has been beyond reproach. With each doctor in the state recognizing his responsibilities to his profession and Blue Shield, the future can be a glorious one.



Medical Examiner System in Michigan a Reality



LEMOYNE SNYDER, M.D.
"Father" of medical
examiner system

Michigan took progressive steps through its Legislature with the adoption of a bill to do away with the outmoded coroner system and replace it with a medical examiner system.

The House of Representatives passed Senate Bill 1293 on May 14 upon recommendation of the Michigan State Medical Society. While the bill passed in the 1953 Legislature is not the final answer to a complete medical examiner system, it is the beginning. As passed, the measure allows the Board of Supervisors in individual counties of the state to determine whether the system is to be adopted in their area. During its processing through the Legislature, the section setting up a state medical examiner to co-ordinate the activities of the county medical examiners was deleted. Political observers in Lansing believe, however, that in future years the Legislature will become aware of the necessity for the office of state medical examiner and see the wisdom of inserting this office into the law.

The medical examiner system has been the personal project of LeMoyne Snyder, M.D., Lansing, noted medico-legal expert, for the past seventeen years. With the exception of the years of World War II, a medical examiner bill has been introduced in all regular sessions of the Legislature since 1936, each drafted and improved by Dr. Snyder. While waiting for Michigan to act, he had the satisfaction of witnessing his bill drafted into law by several other states!

Dr. Snyder was among many individuals and groups who were interested in the progressive measure. He was instrumental in getting a concert of opinion among the several organizations so that opposition previously encountered, due to misunderstandings, was obviated this year. Assisting in the drafting of the 1953 bill were such organizations as the Michigan Pathological So-

ciety, the State Bar of Michigan, the Michigan Association of Police Chiefs, the Michigan Prosecuting Attorneys Association, the Michigan Municipal League, and the Michigan State Medical Society.

In previous years, the measure had never come out of legislative committee. While the bill, as introduced in 1953, was quite similar to those introduced since 1936, the suggestions made by representatives of the sponsoring organizations greatly assisted in the final success of the legislation.

For proper criminal investigation, it has been proven there is a definite need for a medical examiner system in Michigan to replace the antiquated and ineffective coroner system. The state has long been below national averages for the number of homicides and suicides reported in a year's period. It has correspondingly been above the national average in deaths from natural causes. Obviously, many murders have gone undetected in Michigan merely because the coroner called to the scene of the unexpected death was not able to determine the exact cause of death. Far too often deaths of a questionable nature have been attributed to "heart attack."

Although medical examiners may not take office until January, 1954, the Michigan State Medical Society and component county medical societies should recognize the opportunities and the planning and preparations for making the medical examiner system a success. Since the bill is permissive, it is up to the county medical society to work toward its adoption in the county. That work should also include the acceptance of the responsibility of assisting the Board of Supervisors in finding adequately trained M.D.s to do the important job. It is anticipated that through the co-operation of groups interested in medical-legal matters, a special program of training for medical examiners can be developed. Each county medical society should implement and sponsor such a necessary program.

Law enforcement agencies join with the medical profession in predicting a future of progress in the investigation of fatal violence in this state.

TENTATIVE OUTLINE OF 1953 ASSEMBLY AND SECTION SPEAKERS
88TH ANNUAL SESSION, MICHIGAN STATE MEDICAL SOCIETY

Grand Rapids, September, 1953

Time	Wednesday September 23, 1953	Thursday September 24, 1953	Friday September 25, 1953
A.M. 8:30-9:00	Registration Exhibits Open	Registration Exhibits Open	Registration Exhibits Open
9:00-9:30	FOUR SURGICAL SUBJECTS <i>Surgery</i> WALTER G. MADDOCK, M.D. Chicago, Ill.	GENERAL PRACTICE DAY General Practice CHEVALIER L. JACKSON, M.D. Philadelphia, Pa.	<i>Gastroenterology-Proctology</i> (Beaumont Lecture) J. A. BARGEN, M.D. Rochester, Minn.
9:30-10:00	<i>Surgery</i> W. D. HOLDEN, M.D. Cleveland, Ohio	<i>Surgery (Industrial)</i> MICHAEL L. MASON, M.D. Chicago, Ill.	<i>Dermatology</i> JOHN G. DOWNING, M.D. Boston, Mass.
10:00-11:00	INTERMISSION TO VIEW EXHIBITS	INTERMISSION TO VIEW EXHIBITS	INTERMISSION TO VIEW EXHIBITS
11:00-11:30	<i>Surgery</i> EVERETT I. EVANS, M.D. Richmond, Va.	<i>Otolaryngology</i> GEORGE E. SHAMBAUGH, JR., M.D. Chicago, Ill.	<i>Radiology</i> LEO G. RIGLER, M.D. Minneapolis, Minn.
11:30-12:00 M.	<i>Urology</i> FRANK HINMAN, JR., M.D. San Francisco, Calif.	<i>Medicine</i> BLAIR HOLCOMB, M.D. Portland, Oregon	<i>Public Health and Preventive Medicine</i> JOHN KNUTSON, D.D.S. Washington, D. C.
P.M. 12:00-1:00	DISCUSSION CONFERENCE	DISCUSSION CONFERENCE	DISCUSSION CONFERENCE
2:00-2:30	<i>Pediatrics</i> LEO M. TARAN, M.D. Long Island, N. Y.	<i>Obstetrics</i> To Be Announced	<i>Pathology</i> W. D. FORBUS, M.D. Durham, North Carolina
2:30-3:00	<i>Ophthalmology</i> W. L. BENEDICT, M.D. Rochester, Minn.	<i>Gynecology</i> ARTHUR T. HERTIG, M.D. Boston, Mass.	<i>Syphilology</i> H. J. MAGNUSON, M.D. Chapel Hill, N. C.
3:00-4:00	INTERMISSION TO VIEW EXHIBITS	INTERMISSION TO VIEW EXHIBITS	3:00-3:30 p.m. FINAL INTERMISSION TO VIEW EXHIBITS
4:00-4:30	<i>Obstetrics</i> To Be Announced	<i>Pediatrics</i> VICTOR A. NAJJAR, M.D. Baltimore, Md.	3:30-4:00 <i>Medicine</i> To Be Announced
4:30-5:00	<i>Nervous and Mental Diseases</i> O. SPURGEON ENGLISH, M.D. Philadelphia, Pa.	<i>General Practice</i> LOUIS A. M. KRAUSE, M.D. Baltimore, Maryland	4:00-4:30 <i>Medicine</i> HENRY WELCH, M.D. Washington, D. C.
5:00-6:00	FIVE SECTION MEETINGS <i>Ophthalmology</i> W. L. BENEDICT, M.D. Rochester, Minn.	FOUR SECTION MEETINGS <i>Otolaryngology</i> GEORGE E. SHAMBAUGH, JR., M.D. Chicago, Ill.	4:30-5:00 <i>Surgery</i> JULIAN JOHNSON, M.D. Philadelphia, Pa.
	<i>Nervous and Mental Diseases</i> O. SPURGEON ENGLISH, M.D. Philadelphia, Pa.	<i>General Practice</i> H. H. SADLER, M.D. Grosse Pointe, Mich.	FIVE SECTION MEETINGS <i>Radiology</i> LEO G. RIGLER, M.D. Minneapolis, Minn.
	<i>Pediatrics</i> LEO M. TARAN, M.D. Long Island, N. Y.	<i>Obstetrics-Gynecology</i> To Be Announced	<i>Dermatology-Syphilology</i> JOHN G. DOWNING, M.D. Boston, Mass.
	<i>Surgery</i> W. D. HOLDEN, M.D. Cleveland, Ohio	<i>Gastroenterology-Proctology</i> J. A. BARGEN, M.D. Rochester, Minn.	<i>Public Health and Preventive Medicine</i> JOHN KNUTSON, D.D.S. Washington, D. C.
	<i>Urology</i> FRANK HINMAN, JR., M.D. San Francisco, Calif.		<i>Pathology</i> W. D. FORBUS, M.D. Durham, North Carolina
	8:30 to 10:30 p.m. Officers' Night Biddle Lecture	10:00 p.m. to 1:00 a.m. State Society Night MSMS Entertainment	<i>Medicine</i> HENRY WELCH, M.D. Washington, D. C. 5:30 p.m. END OF ASSEMBLY

Michigan State Medical Society

The 88th Annual Session



WILLIAM BROMME, M.D.
Detroit
Council Chairman



R. J. HUBBELL, M.D.
Kalamazoo
President



R. H. BAKER, M.D.
Pontiac
Speaker



L. FERNALD FOSTER, M.D.
Bay City
Secretary

OFFICIAL CALL

The Michigan State Medical Society will convene in Annual Session in Grand Rapids, Michigan, on September 21, 22, 23, 24, 25, 1953. The provisions of the Constitution and By-Laws and the Official Program will govern the deliberations.

R. J. HUBBELL, M.D.
President

WILLIAM BROMME, M.D.
Council Chairman

R. H. BAKER, M.D.
Speaker

J. E. LIVESAY, M.D.
Vice Speaker

Attest:

L. FERNALD FOSTER, M.D.
Secretary



J. E. LIVESAY, M.D.
Flint
Vice Speaker

TWO-DAY SESSION OF HOUSE OF DELEGATES

SEPTEMBER 21-22, 1953

The 1953 House of Delegates of the Michigan State Medical Society will hold a two-day session beginning Monday, September 21, at 10:00 a.m. The business of the House of Delegates will be transacted in the Ballroom of the Pantlind Hotel, Grand Rapids.

The House will meet also on Monday at 2:00 p.m. and at 8:00 p.m. and on Tuesday, September 22, at 9:30 a.m. and at 8:00 p.m.

The intervals between meetings of the House of

Delegates have been spaced to permit the Reference Committees ample time to transact all business referred to them.

SEATING OF DELEGATES

"Any Delegate-Elect not present to be seated at the hour of call of the first meeting may be replaced by the accredited Alternate next on the list as certified by the Secretary of the component County Society involved."—MSMS By-Laws, Chapter 8, Section 6.

Michigan State Medical Society

The 88th Annual Session

PANTLIND HOTEL—CIVIC AUDITORIUM, GRAND RAPIDS, MICHIGAN

September 21, 22, 23, 24, 25, 1953

INFORMATION

- **GRAND RAPIDS WILL BE HOST TO MSMS IN SEPTEMBER, 1953**
- **MSMS HOUSE OF DELEGATES** convenes Monday, September 21, at 10:00 a.m., Ballroom, Pantlind Hotel. It will hold three meetings on Monday and two meetings on Tuesday, September 22.
- **THE PROGRAM OF THE ASSEMBLY** for the 88th Annual Session of the Michigan State Medical Society lists guest speakers from all parts of the United States. They are the usual stars in the medical world which always grace the podium at annual conventions of the Michigan State Medical Society; they insure a valuable concentrated continuation course in all phases of medicine and surgery for the busy practitioners of Michigan, neighboring states and the Province of Ontario, on September 23-24-25, 1953.
- **REGISTRATION**, Tuesday afternoon through Friday afternoon, September 22-25, Civic Auditorium. **Advance registration**—on Tuesday and early Wednesday morning—will save the Doctors' time. Present your State Medical Society or Canadian Medical Association membership card to expedite registration.
- NO REGISTRATION FEE FOR STATE MEDICAL SOCIETY AND CMA MEMBERS.**

Doctors of Medicine, who are *not* members of their state medical society or of the Canadian Medical Association, will be accorded the privileges of the MSMS Annual Session upon payment of a \$25.00 registration fee.
- **REGISTER AS SOON AS YOU ARRIVE. ADMISSION BY BADGE ONLY.**
- **ALL SUBJECTS** at the MSMS Annual Session are applicable to clinical medicine. They stress diagnosis and treatment, usable in every-day practice.
- **POSTGRADUATE CREDITS** given to every MSMS member who attends MSMS Annual Session.
- **SIX ASSEMBLIES** and one public meeting—fourteen Section Meetings—three Discussion Conferences, all on September 23-24-25.
- **A DISCUSSION CONFERENCE**—featuring the Guest Essayists of each day—will be held daily from 12:00 noon to 1:00 p.m. in the Black and Silver Ballroom of the Civic Auditorium. Audience participation invited.
- **SECTION MEETINGS** will follow the daily Assemblies—5:00 to 6:00 p.m.
- **PAPERS WILL BEGIN AND END ON TIME.** This scientific meeting will feature by-the-clock promptness and regularity.
- **ONE HUNDRED TWENTY-TWO TECHNICAL EXHIBITS AND TWENTY-ONE SCIENTIFIC EXHIBITS** will contain much of interest and value. Intermissions to view the exhibits have been arranged.
- **W. C. BEETS, M.D., GRAND RAPIDS**, is General Chairman of the Grand Rapids Committee on Arrangements for the 1953 MSMS Annual Session.
- **CABARET-STYLE DANCE AND ENTERTAINMENT**, with the compliments of the Michigan State Medical Society, will be held in the Ballroom of the Pantlind Hotel on Thursday evening, September 24. All who register, and their ladies, will receive a card of admission and are cordially invited to attend.
- **THE WOMAN'S AUXILIARY** to the Michigan State Medical Society will present an attractive social and business program at the Pantlind Hotel, Grand Rapids. The wife of every MSMS member is cordially invited to attend.
- **MEMBERS OF MICHIGAN MEDICAL SERVICE** will meet in annual session, Tuesday, September 22, Ballroom, Pantlind Hotel, at 2:00 p.m., following the annual MMS luncheon at 1:00 p.m.

SCIENTIFIC ASSEMBLY

Wednesday-Thursday-Friday, Sept. 23-24-25, 1953

SAVE AN ORDER FOR THE EXHIBITOR AT THE MICHIGAN STATE MEDICAL SOCIETY ANNUAL SESSION

MICHIGAN STATE MEDICAL SOCIETY

The 88th Annual Session

PANTLIND HOTEL, GRAND RAPIDS, SEPTEMBER 21-22, 1953

HOUSE OF DELEGATES

ORDER OF BUSINESS*

MONDAY, SEPTEMBER 21

Ballroom, Pantlind Hotel, Grand Rapids

10:00 a.m.—First Meeting

1. Call to order by Speaker
2. Report of Committee on Credentials
3. Roll Call
4. Appointment of Reference Committees
 - (a) On Officers' Reports
 - (b) On Reports of The Council
 - (c) On Reports of Standing Committees
 - (d) On Reports of Special Committees
 - (e) On Constitution and By-Laws
 - (f) On Resolutions
 - (g) On Special Memberships
 - (h) On Rules and Order of Business
 - (i) On Legislation and Public Relations
 - (j) On Hygiene and Public Health
 - (k) On Medical Service and Prepayment Insurance
 - (l) On Miscellaneous Business
 - (m) On Executive Session
 - (n) On Emergency Medical Service
5. Speaker's Address—R. H. Baker, M.D., Pontiac
6. President's Address—R. J. Hubbell, M.D., Kalamazoo
7. President-Elect's Address—L. W. Hull, M.D., Detroit
8. Annual and Supplemental Reports of The Council—William Bromme, M.D., Detroit, Chairman
9. Report of Delegates to American Medical Association—W. A. Hyland, M.D., Grand Rapids, Chairman
10. Brief of Annual Report of Woman's Auxiliary President—Mrs. William Mackersie, Detroit
11. Selection of Michigan's Foremost Family Physician
12. Resolutions**

MONDAY SEPTEMBER 21

Ballroom, Pantlind Hotel, Grand Rapids

2:00 p.m.—Second Meeting

13. Supplementary Report of Committee on Credentials
14. Roll Call
15. Reports of MSMS Standing Committees
 - A. Committee on Postgraduate Medical Education
 - B. Preventive Medicine Committee
 - (1) Committee on Rheumatic Fever Control
 - (2) Cancer Control Committee (and Subcommittees)

- (3) Maternal Health Committee
- (4) Venereal Disease Control Committee
- (5) Tuberculosis Control Committee
- (6) Industrial Health Committee
- (7) Mental Hygiene Committee
- (8) Child Welfare Committee
 - (a) Subcommittee on Hearing Defects
 - (b) Subcommittee of Ophthalmologists
- (9) Iodized Salt Committee
- (10) Geriatrics Committee
 - (a) Subcommittee to Study Problems of Caring for the Aged
 - (b) Subcommittee on Diabetes Control

C. Public Relations Committee (and Subcommittees)

D. Ethics Committee

E. Legislative Committee

16. Reports of Special Committees

A. Beaumont Memorial Restoration Committee (and Subcommittees)

B. Scientific Radio Committee

C. Advisory Committee to Woman's Auxiliary

D. Advisory Committee to Michigan State Medical Assistants Society

E. Advisory Committee to National Foundation for Infantile Paralysis

Reports of the Committees of The Council, including Committee on Scientific Work, are included in the Annual Report of The Council

MONDAY, SEPTEMBER 21

Ballroom, Pantlind Hotel, Grand Rapids

8:00 p.m.—Third Meeting

17. Supplementary Report of Committee on Credentials
18. Roll call
19. Unfinished business
20. New business
21. Reports of Reference Committees
 - (a) On Officers' Reports
 - (b) On Reports of The Council
 - (c) On Reports of Standing Committees
 - (d) On Reports of Special Committees
 - (e) On Constitution and By-Laws
 - (f) On Resolutions
 - (g) On Special Memberships
 - (h) On Rules and Order of Business
 - (i) On Legislation and Public Relations
 - (j) On Hygiene and Public Health
 - (k) On Medical Service and Prepayment Insurance
 - (l) On Miscellaneous Business
 - (m) On Executive Session
 - (n) On Emergency Medical Service

*See the Constitution, Articles IV, VII and XII, and the By-Laws, Chapter 8 on "House of Delegates."

**All Resolutions, special reports, and new business shall be presented in writing in triplicate (By-Laws, Chapter 8, Section 10-m).

HOUSE OF DELEGATES—ORDER OF BUSINESS

TUESDAY, SEPTEMBER 22

Ballroom, Pantlind Hotel, Grand Rapids

9:30 a.m.—Fourth Meeting

22. Supplementary Report of Committee on Credentials
23. Roll call
24. Unfinished business
25. New business
26. Supplementary Reports of Reference Committees

TUESDAY, SEPTEMBER 22

Ballroom, Pantlind Hotel, Grand Rapids

8:00 p.m.—Fifth Meeting

27. Supplementary Report of Committee on Credentials
28. Roll call
29. Unfinished Business
30. Supplemental Report of The Council
31. Supplementary Reports of Reference Committees
32. Elections

- (a) Councilors:
 - 11th District—C. A. Paukstis, M.D., Ludington—Incumbent
 - 12th District—A. H. Miller, M.D., Gladstone—Incumbent
 - 13th District—W. S. Jones, M.D., Menominee—Incumbent
 - 17th District—W. B. Harm, M.D., Detroit—Incumbent
- (b) Delegates to American Medical Association:
 - W. A. Hyland, M.D., Grand Rapids—Incumbent
 - R. A. Johnson, M.D., Detroit—Incumbent
 - J. S. DeTar, M.D., Milan—Incumbent
- (c) Alternate Delegates to American Medical Association:
 - E. F. Sladek, M.D., Traverse City—Incumbent
 - W. W. Babcock, M.D., Detroit—Incumbent
 - E. C. Texter, M.D., Detroit—Incumbent
- (d) President-Elect
- (e) Speaker of House of Delegates
- (f) Vice Speaker of House of Delegates

33. Adjournment



MSMS House of Delegates Speaker
ROBERT H. BAKER, M.D., Pontiac, as
"fun-processed" by his good friend,
C. L. A. Oden, M.D., of Muskegon.

Annual Session Appointments

- *General Chairman of the 1953 MSMS Annual Session*
W. C. Beets, M.D., Grand Rapids
- *House of Delegates Press Relations Committee*
J. E. Livesay, M.D., Flint, Chairman
R. H. Baker, M.D., Pontiac
H. F. Dibble, M.D., Detroit
L. Fernald Foster, M.D., Bay City
R. A. Johnson, M.D., Detroit
C. A. Payne, M.D., Grand Rapids
- *Scientific Assembly Press Relations Committee*
C. A. Payne, M.D., Grand Rapids, Chairman
H. G. Benjamin, M.D., Grand Rapids
F. C. Brace, M.D., Grand Rapids
P. W. Kniskern, M.D., Grand Rapids

HOTEL RESERVATIONS
MICHIGAN STATE MEDICAL SOCIETY

88th Annual Session

Grand Rapids, September 21 to 25, 1953

The reservation blank below is for your convenience in making your hotel reservations in Grand Rapids. Please send your application to L. E. Ames, Secretary, Committee on Hotels for MSMS Convention, Pantlind Hotel, Grand Rapids, Michigan. Mailing your application now will be of material assistance in securing hotel accommodations.

As very few singles are available, registrants are requested to co-operate with the Committee on Hotels by sharing a room with another registrant, when convenient.

L. E. Ames, Secretary,
Committee on Hotels, MSMS Convention,
c/o Pantlind Hotel
Grand Rapids, Michigan

Please make hotel reservation(s) as indicated below:

.....Single Room(s)
.....Double Room(s) for.....persons
.....Twin-Bedded Room(s) for.....persons
Arriving September.....hour.....A.M.....P.M.
Leaving September.....hour.....A.M.....P.M.
Hotel of First Choice:.....
Second Choice:.....

Names and addresses of all applicants including person making reservation:

Name	Address	City	State
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.....

Date..... Signature.....
Address..... City.....

JMSMS

MSMS HOUSE OF DELEGATES—1953

Delegates and Alternates

(Names of Alternates appear in *Italics*)

ALLEGAN

Lewis F. Brown, M.D., 133 E. Allen St., Otsego
Elwin B. Johnson, M.D., 144 Brady, Allegan

ALPENA-ALCONA-PRESQUE ISLE

Elbert S. Parmenter, M.D., 140 E. Washington, Alpena
James E. Spens, M.D., Professional Building, Alpena

BARRY

Alexander B. Gwinn, M.D., City Bank Bldg., Hastings
Herbert S. Wedel, M.D., 304 S. Washington St., Hastings

BAY-ARENAC-IOSCO

Orlen J. Johnson, M.D., 207 N. Walnut, Bay City
Walter S. Stinson, M.D., 101 W. John, Bay City
A. Lawrence Ziliak, Jr., M.D., 707 N. Lincoln, Bay City
Neal R. Moore, M.D., 704 N. Jackson, Bay City

BERRIEN

Donald W. Thorup, M.D., 610 Fidelity Building, Benton Harbor
Franklin A. Rice, M.D., 318 N. Fourth, Niles

BRANCH

Harold J. Meier, 87 W. Pearl St., Coldwater
Robert J. Fraser, M.D., 22 W. Pearl St., Coldwater

CALHOUN

Harvey C. Hansen, M.D., 417 Post Bldg., Battle Creek
Stanley T. Lowe, M.D., 1009 Security Bank Bldg., Battle Creek
Leland R. Keagle, M.D., 196 North Ave., Battle Creek

CASS

Sherman L. Loupee, M.D., Dowagiac
Uriah M. Adams, M.D., Marcellus

CHIPPEWA-MACKINAC

Wm. F. Mertaugh, M.D., Central Savings Bank Bldg., Sault Ste. Marie
Earl S. Rhind, M.D., 300 Court St., Sault Ste. Marie

CLINTON

Franklin W. Smith, M.D., St. Johns
William B. McWilliams, M.D., Maple Rapids

DELTA-SCHOOLCRAFT

William A. Lemire, M.D., 1106 1st Ave., So., Escanaba
Albert H. Miller, M.D., 904 Wisconsin, Gladstone

DICKINSON-IRON

Lionel E. Irvine, M.D., 326 W. Genesee, Iron River
Donald R. Smith, M.D., 107 E. A St., Iron Mountain

EATON

Paul H. Engle, M.D., Olivet
Byron P. Brown, M.D., Charlotte

JUNE, 1953

GENESEE

Frank D. Johnson, M.D., 312 Paterson Bldg., Flint
Jackson E. Livesay, M.D., 621 Mott Fd. Bldg., Flint
Clifford W. Colwell, M.D., 706 Citizens Bank Bldg., Flint
Leon M. Bogart, M.D., 1008 Genesee Bank Bldg., Flint
Robert M. Bradley, M.D., 420 Genesee Bank Bldg., Flint
Franklin W. Baske, M.D., 923 Maxine St., Flint
Fleming A. Barbour, M.D., 1439 Mott Fd. Bldg., Flint
George E. Anthony, M.D., 1015 Detroit St., Flint
Southard T. Flynn, M.D., 1121 Mott Fd. Bldg., Flint
H. Maxwell Golden, M.D., 215 N. Saginaw, Flint

GOGEBIC

David C. Eisele, 109 E. Aurora St., Ironwood
John R. Franck, Jr., M.D., Wakefield

GRAND TRAVERSE-LEELANAU-BENZIE

Donald G. Pike, M.D., 876 E. Front, Traverse City
Charles E. Lemen, M.D., 216½ E. Front, Traverse City

GRATIOT-ISABELLA-CLARE

Myron G. Becker, M.D., Edmore
Earle S. Oldham, M.D., Breckenridge

HILLSDALE

Arthur W. Strom, M.D., 32 S. Broad St., Hillsdale
Luther W. Day, M.D., 111 Evans Street, Jonesville

HOUGHTON-BARAGA-KEWEENAW

John T. P. Wickliffe, M.D., 1167 Calumet Ave., Calumet
Alfred La Bine, M.D., 1019 College Ave., Houghton

HURON

Charles W. Oakes, Jr., M.D., Harbor Beach
Edward E. Steinhardt, M.D., Elkton

INGHAM

Franklin L. Troost, M.D., 4341 W. Delhi Rd., Holt
Kenneth H. Johnson, M.D., 1116 Olds Tower, Lansing
Oliver B. McGillicuddy, M.D., 1816 Olds Tower, Lansing
John M. Wellman, M.D., 301 Seymour, Lansing
K. W. Toothaker, M.D., 320 Townsend, Lansing
Edmund J. Robson, M.D., 215 N. Walnut, Lansing
Leo W. Walker, M.D., St. Lawrence Hosp., Lansing
Roland E. Kalmbach, M.D., 301 Seymour St., Lansing

IONIA—MONTCALM

William L. Bird, M.D., Greenville
Milton E. Slagh, M.D., Saranac

JACKSON

Woodward A. Wickham, M.D., 420 W. Michigan Ave., Jackson
Nathan D. Munro, 740 W. Michigan Ave., Jackson
Charles R. Lenz, 405 First St., Jackson
George M. Baker, M.D., Parma

HOUSE OF DELEGATES

KALAMAZOO

Wm. A. Scott, M.D., 208 Bronson Med. Center, Kalamazoo
 Irmel W. Brown, M.D., 306 Kalamazoo Nat. Bank Bldg., Kalamazoo
 Frederick C. Ryan, M.D., 507 S. Burdick, Kalamazoo
 Paul M. Fuller, M.D., 419 S. Burdick, Kalamazoo
 Wm. R. Kavanaugh, M.D., 1029 W. North St., Kalamazoo
 Harold A. Machin, M.D., 420 John St., Kalamazoo

KENT

Luther C. Carpenter, Jr., M.D., 604 Metz Bldg., Grand Rapids
 Guy W. DeBoer, M.D., 220 Medical Arts Bldg., Grand Rapids
 Andrew Van Solkema, M.D., 953 E. Fulton, Grand Rapids
 Aaron V. Wenger, M.D., 302 Loraine Bldg., Grand Rapids
 W. F. Fuller, M.D., 421 Medical Arts Bldg., Grand Rapids
 W. B. Mitchell, 507 Medical Arts Bldg., Grand Rapids
 Richard A. Rasmussen, M.D., Blodgett Medical Bldg., Grand Rapids
 Kenneth E. Fellows, M.D., Metz Building, Grand Rapids
 Charles H. Frantz, M.D., Blodgett Medical Bldg., Grand Rapids
 Harvey M. Andre, M.D., 201 Medical Arts Bldg., Grand Rapids
 John T. Boet, M.D., 503 Loraine Bldg., Grand Rapids
 Albert Van't Hof, M.D., Metz Bldg., Grand Rapids
LAPEER
 Daniel J. O'Brien, M.D., Nepassing St., Lapeer
 Edward H. Lass, M.D., Lapeer

LENAWEE

Keith H. Whitehouse, M.D., 118 W. Main St., Morenci
 Richard E. Dustin, M.D., 103 E. Chicago, Tecumseh

LIVINGSTON

Harold C. Hill, M.D., 116 N. Michigan, Howell
 L. F. May, M.D., 110 N. Michigan, Howell

LUCE

William R. Purmort, M.D., Newberry
 Mathew A. Surrell, M.D., Newberry

MACOMB

Sidney Scher, M.D., 132 Cass Ave., Mt. Clemens
 Oscar D. Stryker, M.D., Macomb Co. Health Dept., Mt. Clemens

MANISTEE

Ellery A. Oakes, M.D., 401 River St., Manistee
 John F. Konopa, M.D., 57 Poplar St., Manistee

MARQUETTE-ALGER

Archie S. Narotzky, M.D., Odd Fellows Bldg., Ishpeming
 Benzoïn C. Baron, M.D., Munising

MASON

Herbert G. Bacon, M.D., Scottville
 Ephraim B. Boldyreff, M.D., Custer

MECOSTA-OSCEOLA-LAKE

Paul Ivkovich, M.D., Reed City
 Gordon H. Yeo, M.D., 126 Maple St., Big Rapids

MEDICAL SOCIETY OF NORTH CENTRAL COUNTIES

Louis F. Hayes, M.D., Grayling
 Gordon L. McKillop, M.D., Gaylord

658

MENOMINEE

John R. Heidenreich, M.D., Daggett
 James N. DeWane, M.D., 413 Tenth Ave., Menominee

MIDLAND

Martin J. Ittner, M.D., 2914 Ashmun St., Midland
 D. J. Kilian, M.D., 3611 Jefferson, Midland

MONROE

Thomas A. McDonald, M.D., 7 E. Front St., Monroe
 John P. Flanders, M.D., 31 Washington, Monroe

MUSKEGON

Norbert W. Scholle, M.D., 1001 Peck St., Muskegon Heights
 Robert D. Risk, M.D., 1160 Ransom St., Muskegon
 Louis L. LeFeuvre, M.D., 450 W. Western, Muskegon
 D. R. Boyd, M.D., 1735 Peck St., Muskegon

NEWAYGO

J. P. Klein, M.D., Fremont
 L. J. Geerlings, M.D., Fremont

NORTHERN MICHIGAN MEDICAL SOCIETY

John R. Rodger, M.D., Bellaire
 Edward F. Crippen, M.D., Mancelona

OAKLAND

John M. Markley, M.D., 849 W. Huron St., Pontiac
 Palmer E. Sutton, M.D., 629 Washington Sq. Bldg., Royal Oak
 Harold A. Furlong, M.D., 932 Riker Bldg., Pontiac
 Robert H. Baker, M.D., 1110 Pontiac State Bank Bldg., Pontiac
 Ethan B. Cudney, M.D., Pontiac Motor Division, Pontiac
 Edson C. Rupp, M.D., 97 S. Edith St., Pontiac
 James D. Green, M.D., 222 E. Maple, Birmingham
 Oliver R. MacKenzie, M.D., 128 Common St., Walled Lake
 Ernest W. Bauer, M.D., 23005 John R St., Hazel Park
 Felix J. Kemp, M.D., 1115 Peoples State Bank Bldg., Pontiac

OCEANA

William G. Robinson, M.D., Hart
 Charles H. Flint, M.D., Hart

ONTONAGON

Harold B. Hogue, M.D., Ewen
 Wm. F. Strong, M.D., Ontonagon

OTTAWA

Dirk C. Bloemendaal, M.D., 47 E. Main, Zeeland
 William Westrate, Sr., M.D., Holland

SAGINAW

Martin F. Bruton, M.D., 315 S. Jefferson Ave., Saginaw
 Joseph P. Markey, M.D., 808 N. Michigan, Saginaw
 Aaron C. Stander, M.D., 1411 Court St., Saginaw
 Louis D. Gamon, M.D., 514 First Savings & Loan, Saginaw
 William B. Kerr, M.D., 300 S. Michigan, Saginaw
 Leonard J. Morgrette, M.D., 603 S. Jefferson, Saginaw

SANILAC

John W. McCrea, M.D., Marlette
 Robert K. Hart, M.D., Howard St., Croswell

SHIAWASSEE

Claude L. Weston, M.D., Matthews Bldg., Owosso
 Chester J. Richards, M.D., Durand

ST. CLAIR

Joseph F. Beër, M.D., S. Riverside Drive, St. Clair
 Walter H. Boughner, M.D., P. O. Box 286, Algonac

JMSMS

HOUSE OF DELEGATES

ST. JOSEPH

Samuel A. Fiegel, M.D., 500 Michigan, Sturgis
Russell A. Springer, M.D., Centerville

TUSCOLA

Lloyd L. Savage, M.D., General Delivery, Caro
Herbert L. Nigg, M.D., Caro

VAN BUREN

William R. Young, M.D., Lawton
Charles Ten Houten, M.D., Paw Paw

WASHTENAW

Paul S. Barker, M.D., University Hosp., Ann Arbor
 Harold F. Falls, M.D., 408 First National Bldg., Ann Arbor
 Otto K. Engelke, M.D., 720 E. Catherine St., Ann Arbor
 R. Wallace Teed, M.D., 215 S. Main, Ann Arbor
Alexander M. Waldron, M.D., 1130 Hill, Ann Arbor
Victor M. Zerbi, M.D., 315 N. Adams St., Ypsilanti
Gerhard H. Bauer, M.D., 505 First National Bldg., Ann Arbor
Charles W. Newton, M.D., 115 E. Liberty St., Ann Arbor

WAYNE

Ralph A. Johnson, M.D., 7815 E. Jefferson, Detroit
 Edwin H. Fenton, M.D., 15125 Grand River Ave., Detroit
 James B. Blodgett, M.D., 606 Kales Bldg., Detroit
 Edward D. Spalding, M.D., 10 Peterboro, Detroit
 Harold Henderson, M.D., 852 Fisher Bldg., Detroit
 James J. Lightbody, M.D., 501 David Whitney Bldg., Detroit
 Robert L. Novy, M.D., 858 Fisher Bldg., Detroit
 Eugene A. Osius, M.D., 901 David Whitney Bldg., Detroit
 Gaylord S. Bates, M.D., 1144 David Whitney Bldg., Detroit
 Wm. S. Reveno, M.D., 958 Fisher Bldg., Detroit
 Grover C. Penberthy, M.D., 1515 David Whitney Bldg., Detroit
 Frank A. Weiser, M.D., 4162 John R., Detroit
 Kenneth B. Babcock, M.D., Grace Hosp., Detroit
 Elmer C. Texter, M.D., 7457 Gratiot Ave., Detroit
 Russell F. Fenton, M.D., 15125 Grand River Ave., Detroit
 C. L. Candler, M.D., 20040 Mack Ave., Grosse Pte. Woods
 Joseph G. Molner, M.D., 334 Bates St., Detroit
 John H. Schlemer, M.D., 13826 Dexter Blvd., Detroit
 Donald C. Beaver, M.D., 432 E. Hancock, Detroit
 Edgar A. Bicknell, M.D., 13641 Wyoming, Detroit
 Osborne A. Brines, M.D., 1512 St. Antoine, Detroit
 Clifford D. Benson, M.D., 1515 David Whitney Bldg., Detroit
 David I. Sugar, M.D., 13120 Broadstreet, Detroit
 Earl G. M. Krieg, M.D., 1842 David Whitney Bldg., Detroit
 Max L. Lichter, M.D., 2900 Oakwood, Milvindale
 Warren W. Babcock, M.D., 868 Fisher Bldg., Detroit
 Wm. L. Brosius, M.D., Harper Hosp., Detroit
 Harold J. F. Kullman, M.D., Veterans Admin. Hosp., Dearborn
 Perry C. Gittins, M.D., 732 Maccabees Bldg., Detroit
 Wm. S. Carpenter, M.D., 1317 David Whitney Bldg., Detroit
 Milton A. Darling, M.D., 673 Fisher Bldg., Detroit
 Harry E. Bagley, M.D., 7541 Oakman Blvd., Dearborn

Harry F. Dibble, M.D., 1313 David Whitney Bldg., Detroit
 Clarence I. Owen, M.D., 4160 John R., Detroit
 Donald A. Young, M.D., 14807 W. McNichols, Detroit
 Clarence E. Umphrey, M.D., 13331 Livernois, Detroit
 Roger V. Walker, M.D., 1255 David Whitney Bldg., Detroit
 Wm. L. Foster, M.D., 2567 W. Grand Blvd., Detroit
 G. Thomas McKean, M.D., 1515 David Whitney Bldg., Detroit
 Edward D. King, M.D., 5455 W. Vernor Hwy., Detroit
 Harold B. Fenech, M.D., 324 Professional Bldg., Detroit
 Clyde K. Hasley, M.D., 1429 David Whitney Bldg., Detroit
 Leslie T. Henderson, M.D., 13038 E. Jefferson, Detroit
 Earl F. Lutz, M.D., 13-204 General Motors Bldg., Detroit
 Lawrence S. Fallis, M.D., Henry Ford Hosp., Detroit
 Louis Jaffe, M.D., 1605 David Broderick Tower, Detroit
 John A. Maloney, M.D., 1338 Maccabees Bldg., Detroit
 Karl L. Swift, M.D., 869 Fisher Bldg., Detroit
 James E. Croushore, M.D., 573 Fisher Bldg., Detroit
 Donald H. Kaump, M.D., Providence Hosp., Detroit
 Edgar G. Cochrane, M.D., 12805 Hamilton, Detroit
 Earle C. Long, M.D., 2626 Rochester, Detroit
 Luther R. Leader, M.D., 1129 David Whitney Bldg., Detroit
 James E. Lofstrom, M.D., 1420 St. Antoine, Detroit
 Alvin E. Price, M.D., 313 David Whitney Bldg., Detroit
 Louis J. Morand, M.D., 641 David Whitney Bldg., Detroit
 L. J. Bailey, M.D., 620 Vinewood Ave., Detroit
 A. Hazen Price, M.D., 62 W. Kirby, Detroit
 Raphael Altman, M.D., 1052 Maccabees, Detroit
 Ralph C. Rueger, M.D., 9149 E. Jefferson, Detroit
 Paul J. Waltz, M.D., 16127 Woodward Ave., Detroit
 Sidney Adler, M.D., 872 Fisher Bldg., Detroit
 Edwin F. Dittmer, M.D., 14320 E. Jefferson, Detroit
 Edward H. Lauppe, M.D., 1650 David Whitney Bldg., Detroit
 Sigmund A. Zukowski, M.D., 6626 Van Dyke, Detroit
 Wm. P. Curtis, M.D., 3181 E. Jefferson, Detroit
 Francis P. Rhoades, M.D., 970 Maccabees Bldg., Detroit
 Remus G. Robinson, M.D., 3751 31st St., Detroit
 James D. Fryfogle, M.D., 655 Fisher Bldg., Detroit
 Arthur B. Levant, M.D., 14828 E. Warren, Detroit
 Saul Rosenzweig, M.D., 2114 David Broderick Tower, Detroit
 Stephen V. Goryl, M.D., 9953 E. Forest, Detroit
 Joseph A. Kasper, M.D., Bon Secour Hosp., Grosse Pointe
 V. George Chabut, M.D., 206 W. Dunlap, Northville
 Duncan A. Cameron, M.D., 1450 Kales Bldg., Detroit
 Lawrence A. Pratt, M.D., Doctors Bldg., Suite 800, 3919 John R., Detroit
 John E. Hauser, M.D., 671 Fisher Bldg., Detroit
 J. Courtney Fremont, M.D., 1202 David Whitney Bldg., Detroit
 Harold A. Ott, M.D., 706 Maccabees Bldg., Detroit
 Harold L. Morris, M.D., 1069 Fisher Bldg., Detroit
 Joseph A. Witter, M.D., 344 Glendale, Detroit
 Paul J. Connolly, M.D., 113 Martin Place, Detroit
 Edwin J. Hammer, M.D., 16616 Mack, Detroit
 Edmond L. Cooper, M.D., 414 David Whitney Bldg., Detroit
 Robert G. Swanson, M.D., 936 Alter Rd., Detroit
 Homer A. Howes, M.D., 1515 David Whitney Bldg., Detroit
 Raymond A. Sokolov, M.D., 755 Fisher Bldg., Detroit
 Arthur E. Schiller, M.D., 2008 David Broderick Tower, Detroit
 Edward M. Vardon, M.D., 12897 Woodward Ave., Detroit
 Edward F. Eldredge, M.D., 412 Kales Bldg., Detroit

WEXFORD-MISSAUKEE

Robert V. Daugherty, M.D., 115 S. Mitcheell, Cadillac
 Michael R. Murphy, M.D., Granite Bldg., Cadillac

MSMS HOUSE OF DELEGATES, 1953

REFERENCE COMMITTEES, CREDENTIALS COMMITTEE, AND PRESS RELATIONS COMMITTEE

(All meetings of Reference Committees will be held in the *Pantlind Hotel*, Grand Rapids.)

CREDENTIALS COMMITTEE

A. B. Gwinn, M.D., *Chairman*.....Hastings
D. G. Pike, M.D.....Traverse City
A. W. Strom, M.D.....Hillsdale

REFERENCE COMMITTEES

Officers Reports

Room 322 (Furniture Capitol Suite)

W. S. Stinson, M.D., *Chairman*.....Bay City
D. A. Young, M.D.....Detroit
N. W. Scholle, M.D.....Muskegon Heights
W. R. Young, M.D.....Lawton
J. F. Beer, M.D.....St. Clair

Reports of The Council

Room 325 (West Michigan Room)

L. C. Carpenter, M.D., *Chairman*.....Grand Rapids
H. C. Hansen, M.D.....Battle Creek
F. D. Johnson, M.D.....Flint
M. G. Becker, M.D.....Edmore
C. W. Oakes, M.D.....Harbor Beach
H. C. Hill, M.D.....Howell
R. F. Fenton, M.D.....Detroit

Reports of Standing Committees

Room 324 (Furniture Capitol Suite)

L. M. Bogart, M.D., *Chairman*.....Flint
L. F. Brown, M.D.....Otsego
H. B. Hogue, M.D.....Ewen
J. J. Lightbody, M.D.....Detroit
S. A. Fiegel, M.D.....Sturgis
L. E. Irvine, M.D.....Iron River

Reports of Special Committees

Room 327

C. L. Weston, M.D., *Chairman*.....Owosso
K. H. Johnson, M.D.....Lansing
W. B. Mitchell, M.D.....Grand Rapids
M. A. Darling, M.D.....Detroit
J. T. P. Wickliffe, M.D.....Calumet
D. W. Thorup, M.D.....Benton Harbor
H. A. Furlong, M.D.....Pontiac

Constitution and By-Laws

Room 328

S. L. Loupee, M.D., *Chairman*.....Dowagiac
W. A. Wickham, M.D.....Jackson
Sidney Scher, M.D.....Mt. Clemens
W. F. Mertaugh, M.D.....Sault Ste. Marie
F. W. Smith, M.D.....St. Johns
E. S. Parmenter, M.D.....Alpena

Resolutions

Room 323 (Directors Room)

R. A. Johnson, M.D., *Chairman*.....Detroit
C. E. Umphrey, M.D.....Detroit
P. S. Barker, M.D.....Ann Arbor
M. F. Bruton, M.D.....Saginaw
J. M. Markley, M.D.....Pontiac
E. A. Oakes, M.D.....Manistee
W. A. Scott, M.D.....Kalamazoo

Rules and Order of Business

Room 325

H. J. Meier, M.D., *Chairman*.....Coldwater
D. C. Eisele, M.D.....Ironwood
E. D. King, M.D.....Detroit

Legislation and Public Relations

Room 327

J. R. Heidenreich, M.D., *Chairman*.....Daggett
T. A. McDonald, M.D.....Monroe
L. F. Hayes, M.D.....Grayling
J. W. McCrea, M.D.....Marlette
W. S. Reveno, M.D.....Detroit

Hygiene and Public Health

Room 322

O. K. Engelke, M.D., *Chairman*.....Ann Arbor
J. G. Molner, M.D.....Detroit
L. L. Savage, M.D.....Caro
M. J. Ittner, M.D.....Midland
A. S. Narotzky, M.D.....Ispeming

Medical Service and Pre-payment Insurance

Room 324

J. P. Markey, M.D., *Chairman*.....Saginaw
K. B. Babcock, M.D.....Detroit
J. M. Wellman, M.D.....Lansing
D. J. O'Brien, M.D.....Lapeer
H. G. Bacon, M.D.....Scottville
J. P. Klein, M.D.....Fremont

Miscellaneous Business

Room 327

E. A. Bicknell, M.D., *Chairman*.....Detroit
R. V. Daugherty, M.D.....Cadillac
W. H. Robinson, M.D.....Hart
D. C. Bloemendaal, M.D.....Zeeland
I. W. Brown, M.D.....Kalamazoo

Special Memberships

Room 222 (Grand Rapids Room)

G. W. DeBoer, M.D., *Chairman*.....Grand Rapids
P. H. Engle, M.D.....Olivet
W. A. Lemire, M.D.....Escanaba
W. L. Brosius, M.D.....Detroit
Paul Ivkovich, M.D.....Reed City

Emergency Medical Service

Room 222

J. R. Rodger, M.D., *Chairman*.....Bellaire
D. I. Sugar, M.D.....Detroit
K. H. Whitehouse, M.D.....Morenci

Executive Session

Room 328

J. H. Schlemer, M.D., *Chairman*.....Detroit
C. W. Colwell, M.D.....Flint
W. L. Bird, M.D.....Greenville
E. D. Spalding, M.D.....Detroit
P. E. Sutton, M.D.....Royal Oak

PRESS RELATIONS COMMITTEE

Press Room, Parlor D, Pantlind Hotel

J. E. Livesay, M.D., *Chairman*.....Flint
R. H. Baker, M.D.....Pontiac
H. F. Dibble, M.D.....Detroit
L. Fernald Foster, M.D.....Bay City
R. A. Johnson, M.D.....Detroit
C. A. Payne, M.D.....Grand Rapids

Annual Reports

ANNUAL REPORT OF THE ARBITRATION COMMITTEE (Uniform Fee Schedule for Governmental Agencies)—1952-1953

The Committee had four meetings in 1953 and disposed of twenty-five items.

The work has been pleasant and we hope we have been of service.

Respectfully submitted,
T. H. HUNT, M.D., *Chairman*
A. E. CATHERWOOD, M.D.
C. K. HASLEY, M.D.
I. S. SCHEMBECK, M.D.
ARCH WALLS, M.D.
MR. J. W. CASTELLUCCI, *Advisor*

ANNUAL REPORT OF MEDICAL PROCUREMENT ADVISORY COMMITTEE—1952-1953

The Medical Procurement Advisory Committee had one formal meeting during the year on January 15, 1953. It was the joint meeting with the Michigan State Director of Selective Service and the Michigan State Voluntary Advisory Committee to Selective Service. The purpose of the meeting was to further mutual understanding between the groups represented and to arrange certain technical methods of handling problems. In addition to the work concerned with the meeting, the various individuals of the State Committee have been active in local committees and ironing out local problems.

Respectfully submitted,
C. I. OWEN, *Chairman*
M. J. CAPRON, M.D.
C. H. FRANTZ, M.D.
W. H. HURON, M.D.
E. C. MILLER, M.D.
E. A. OAKES, M.D.
G. C. PENBERTHY, M.D.
H. H. STRYKER, M.D.

ANNUAL REPORT OF COMMITTEE ON BLOOD BANKS—1952-1953

There has been no meeting of the Committee on Blood Banks during the year. No problems or requests were presented to the Chairman. There were apparently no continuing problems requiring attention. Regional problems have been studied by local and county committees.

Respectfully submitted,
WALTER A. STRYKER, M.D., *Chairman*
W. B. COOKSEY, M.D.
R. H. HOLMES, M.D.
A. A. HUMPHREY, M.D.
HAZEL R. PRENTICE, M.D.

ANNUAL REPORT OF COMMITTEE ON COURSES IN MEDICAL ECONOMICS—1952-1953

The Committee on Courses in Medical Economics has held no stated meetings, but there has been considerable interchange between the members of the committee by telephone and otherwise.

The Chairman was able to arrange a series of only three lectures on medical economics at the University of Michigan due to the lateness of his appointment and was unable to arrange any schedule at Wayne University for the current year.

Conversations with the president elect and other officers indicated no opposition to the activity of the committee in setting up at least a skeleton program for the

coming year to be handed over to the new committee whenever it is appointed. This series of lectures will cover the first semester at least and possibly the second semester as well.

The Committee recommends in view of the past history of the work of this and previous committees that at least one or two members hold over each year in order to keep the work of the committee functional and to avoid the disadvantage of a late start as has happened so frequently in the past.

Respectfully submitted,
R. WALLACE TEED, M.D., *Chairman*
L. FERNALD FOSTER, M.D.
E. A. OSIUS, M.D.
J. R. RODGER, M.D.
E. F. SLADEK, M.D.

ANNUAL REPORT OF CHILD WELFARE COMMITTEE—1952-1953

The interests of the Committee were centered around the whole subject of child welfare as it applied to Michigan and our efforts were aimed at the improvement of child health as it applied to the state as a whole. The Committee was ably assisted by and co-operated with the Michigan Department of Health in its efforts towards this goal.

The Sub-Committee of Ophthalmologists was extremely active in the field of Severe Visual Handicaps in childhood and continued its efforts to investigate and advise on Retrolental Fibroplasia. The entire Committee met at The Michigan School for the Blind, Lansing, in order to obtain factual evidence on the problem in Michigan.

The Sub-Committee on Hearing Defects continued active co-operation with the Michigan Department of Health in the hearing testing program.

Other problems considered by the Committee with recommendations to the Michigan State Medical Society were the subject of intern training in pediatrics in Michigan hospitals; gamma globulin in poliomyelitis prophylaxis; adoption of children in the state; the present facilities for diagnosis and treatment of epilepsy and the problem of seriously emotionally disturbed children.

A Sub-Committee to Study the whole Subject of Accident Prevention in Childhood, both locally and nationally, was appointed and will report at a later date.

The Chairman wishes to express his appreciation for the active participation of the Committee members at meetings and hopes that their discussions and recommendations have been of help to the Michigan State Medical Society.

Respectfully submitted,
G. E. ANTHONY, M.D., *Chairman*
W. N. BRALEY, M.D.
G. B. CORNELIUSON, M.D.
CARLETON DEAN, M.D.
M. J. FEELEY, M.D.
J. B. HASSBERGER, M.D.
RUTH E. LALIME, M.D.
J. L. LAW, M.D.
O. B. MCGILLICUDDY, M.D.
DON MARSHALL, M.D.
R. J. MASON, M.D.
W. S. NOLTING, M.D.
M. F. OSTERLIN, M.D.
E. T. PALM, M.D.
A. L. RICHARDSON, M.D.
R. S. SIMPSON, M.D.
L. P. SONDA, M.D.
J. N. P. STRUTHERS, M.D.
H. A. TOWSLEY, M.D.

Michigan's Department of Health

Albert E. Heustis, M.D., Commissioner

DISTRIBUTION OF POLIOMYELITIS IMMUNE GLOBULIN IN MICHIGAN

Michigan's basic allocation of poliomyelitis immune globulin (human) is computed on the average number of cases of poliomyelitis reported to the state health department during 1947 through 1950 multiplied by 60 cc.

Since the average number of cases is 1,564, the basic allotment is 93,840 cc. The dose of poliomyelitis immune globulin (human) is 0.14 cc. per pound body weight, an average dose of 7 cc. per person. Michigan's basic allotment will permit injection of approximately 13,406 persons.

A reserve of approximately 33 per cent of the total stockpile has been retained by the national allocating authority for use in mass community prophylaxis in epidemic areas. An additional 10 per cent has been retained for unusual or special situations.

In addition to the basic allocation, there will be further allocations based on the following criteria:

(A) States and Territories shall receive, at appropriate intervals, additional allocations of 60 cc. for each reported case in excess of the mean cumulative annual incidence for the same seasonal period. It may be necessary to make adjustments in these additional allocations to individual states, depending upon the proportion of paralytic cases reported.

(B) About July 1, and at bi-weekly intervals thereafter until October 1, supplementary allocations will be made to States and Territories in proportion to the typical seasonal incidence of poliomyelitis in the United States for the period following the allocation at a level designed to distribute the supply by October 1. Allocation will be proportional to the morbidity then being reported.

(C) Special allocations from the reserve retained by the national allocating authority for mass prophylaxis shall be available upon application by the State or Territorial Health Officer to the national allocating authority.

Michigan's basic allotment of poliomyelitis immune globulin is expected to arrive sometime late in May. Half of it will be distributed to the full-time county, district and city health departments.

First priority for use of poliomyelitis immune globulin shall be for household contacts thirty years of age or under of clinically diagnosed cases, and pregnant women of any age.

Second priority shall be for intimate contacts of poliomyelitis cases beyond the household group, within the limits of the amount of poliomyelitis immune globulin

available, the contacts to be fifteen years of age or under and pregnant women of any age. This method is intended to include only extremely close extrafamilial contacts of a case, with preference given to the most susceptible age group involved.

The third priority shall be for community prophylaxis, the injection of the most susceptible age groups in areas with exceptionally high epidemic incidence. This has been shown to be effective in direct proportion to the incidence of the disease. Careful epidemiological study by qualified persons is indicated prior to use in this manner, and prior approval must be obtained from the Division of Disease Control, Records and Statistics of the Michigan Department of Health.

When the State's basic allotment of poliomyelitis immune globulin is received full-time health departments will be instructed to release it to physicians based on the physician furnishing the name and date of onset of the case as well as the names, ages and weights of household contacts to be injected. Since immune serum globulin is all labeled "Caution—Federal Law Prohibits Dispensing Without Prescription," the physician's signature will be necessary.

As the health jurisdictions distribute their initial supply, they will be able to have it replenished from the Michigan Department of Health within the available supply of the product up to the amount they have distributed.

In those counties in which there is no full-time health department, strategically located hospitals will be used as distributing centers.

LAST SUMMER'S POLIO STUDIED

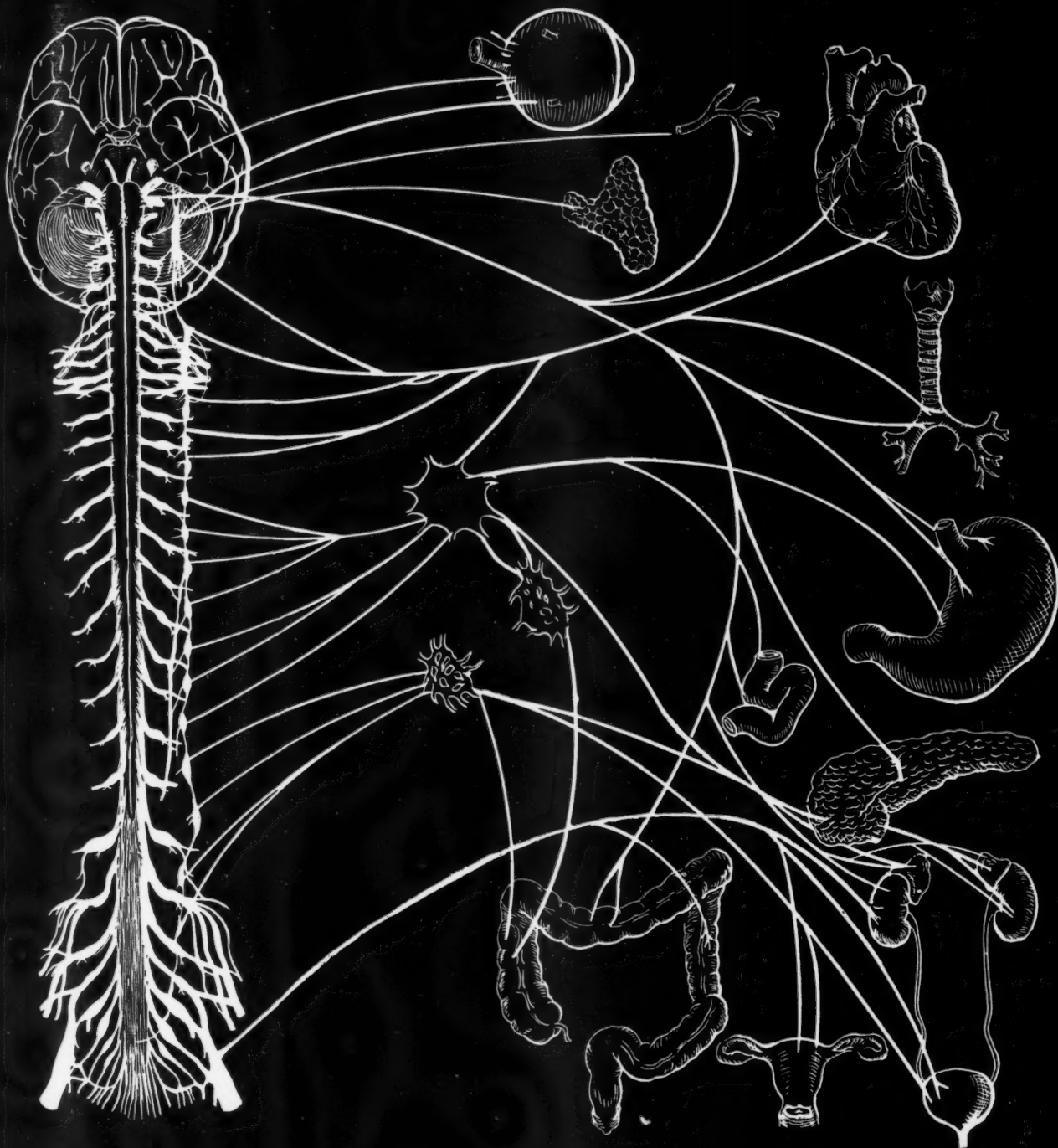
Analysis of the polio incidence of last summer shows that 75 per cent of the 3,912 cases reported were in children fifteen years of age and under and over half were in children under ten. Age range was from under one to sixty-two years.

The 1952 total of 3,912 reported cases exceeded the 1,463 in 1951, the 2,029 in 1950 and the 2,909 in 1949, the previous high year.

Cases reported in 1952 were about evenly divided between the paralytic and nonparalytic types, 51 per cent paralytic and 49 per cent nonparalytic. This is the average Michigan experience. About one out of every twenty cases resulted in death.

Unusual in the 1952 experience were the eighty-three cases reported in babies under one year of age.

The 1952 epidemic reached its peak the last week in August, about the time it is usually expected in Michigan.



Excess neural stimulation over the parasympathetic subdivision plays an important role in such clinical conditions as peptic ulcer, certain forms of gastritis, pylorospasm, pancreatitis, spastic colon, bladder spasm and hyperhidrosis.

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In Memoriam

CHARLES W. BEERS, M.D., of Muskegon Heights, died March 28, 1953, at the age of fifty-eight.

For the past twelve years, Dr. Beers had served the community of Muskegon Heights, and, previous to that, he practiced in Holton.

Dr. Beers was graduated from Wayne University College of Medicine in 1933, and interned at Hackley Hospital, Muskegon.

He was a member of the Muskegon County Medical Society, the American Society of Anesthesiologists, and Phi Beta Pi, a medical fraternity.

Dr. Beers is survived by his wife, Ruth; his mother, Mrs. Ida Beers, of Muskegon; a son, Richard; a daughter, Mrs. William Bell; and a brother, Henry L. Beers, of Muskegon.

WARD S. FERGUSON, M.D., of Grand Rapids, died April 16, 1953, at the age of the sixty-six.

Dr. Ferguson was graduated from the Chicago College of Medicine and Surgery in 1910. He had served the community of Grand Rapids as a proctologist until his retirement three years ago. He was one of the founders of the present Ferguson-Droste-Ferguson Hospital in Grand Rapids.

Besides his wife, Ann, he is survived by three sons and one daughter. They are: Mrs. Phyllis Lampman, of Kalamazoo; Ward Ferguson, of Ludington; James A. Ferguson, M.D., of Grand Rapids; and Frederick G. Ferguson, M.D., of Flint. He also leaves a brother, Lynn A. Ferguson, M.D., of Grand Rapids.

THELMA FREEMAN (ARNELL), M.D., of Detroit, died March 23, 1953, at the age of sixty.

Dr. Freeman had practiced medicine in Detroit since her graduation from the University of Michigan in 1924. She was on the staff of Woman's Hospital, Detroit.

Dr. Freeman was a member of the Wayne County Medical Society, the Woman's Medical Association, the Detroit Blackwell Society and Alpha Epsilon Iota Medical sorority.

She is survived by her husband, Dwayne Arnell, and a brother, George D. Freeman.

WM. G. HUTCHINSON, M.D., of Birmingham, died March 26, 1953, at the age of seventy-six.

Dr. Hutchinson had practiced medicine in Detroit and the surrounding area for forty-three years. He was graduated from the Detroit College of Medicine in 1897.

Dr. Hutchinson was attending physician at Children's Free Hospital from 1900 to 1910. He was professor of anatomy at the Detroit College of Medicine from 1903 to 1913. During that time, Dr. Hutchinson was also surgeon to the 1st Battalion of the Michigan Naval Brigade. His service extended from 1904 to 1910.

In 1940, Dr. Hutchinson became Medical Co-ordinator of the Michigan Crippled Children Commission. He

(Continued on Page 666)

50 YEARS AGO

"... in all cases where the milk supply is not private and its conditions fully known, all milk for use in the nursery should be boiled immediately upon its arrival in the house.... Milk completely sterilized by several exposures to heat ... and hermetically sealed, will keep sweet for many weeks, and this device is most valuable for long journeys or ocean voyages."

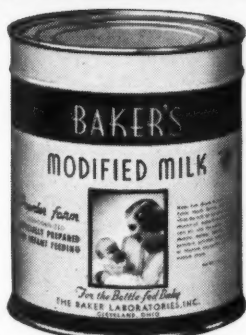


(1)



Baker's Modified Milk Powder is suggested for baby's safety when traveling. Mother can put the prescribed amount of powder for each feeding in a capped, sterile nursing bottle and carry boiled water in a Thermos bottle. Each feeding can then be prepared just before use.

The powder is also especially adaptable for use wherever refrigeration facilities are not available. Here, too, individual feedings may be mixed as needed.



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BAKER'S MODIFIED MILK POWDER FORM

Simplifies infant feeding when traveling
and whenever refrigeration facilities
are not available

(1) Cheadle—Artificial Feeding and Food Disorders of Infants, Sixth Edition (1906)

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IN MEMORIAM

The Knox Gelatine Diet and the Convalescent Child

Convalescence is associated with protein loss of serious magnitude, yet little is known of the fundamental nature of the loss.¹ Loss of nitrogen cannot be prevented; however, nitrogen balance can be maintained, wound healing enhanced, and convalescence shortened, by a high protein diet.²

Otherwise the patient uses his own "available" nitrogen stores to accomplish the healing defect.

The patient "is better off before his nitrogen stores have been wasted than after. Surgeons have long noted that chronically debilitated patients are poor operative risks."³ Decubitus ulcers heal quickly in heavily protein-fed patients.⁴

These facts are clear, as is also the fact that Knox Gelatine, which is pure protein, offers a useful method of supplementing the ordinary dietary protein.

Knox Gelatine is easy to digest, while its supplementary dietary nitrogen will furnish protein without other substances, especially salts of potassium which are retained during convalescence; without excess fat and carbohydrate, which are not needed especially; and without a food volume which may interfere with intake.

1. Howard, J. E. Protein Metabolism During Convalescence After Trauma. Arch. Surg. 50:166, 1945.

2. Co Tui, Minutes of the Conference on Metabolism Aspects of Convalescence Including Bone and Wound Healing. Josiah Macy, Jr. Foundation, Fifth Meeting Oct. 8-9, p. 57, 1943.

3. Whipple, G. H. and Madden, S. C. Hemoglobin, Plasma Protein and Cell Protein: Their Interchange and Construction in Emergencies. Medicine 23:215, 1944.

4. Mulholland, J. H., Co Tui, Wright, A. M., Vinci, V., and Shafiroff, B. Protein Metabolism and Bed Sores. Am. Surg. 118:1015, 1943.



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666

WM. G. HUTCHINSON, M.D.

(Continued from Page 664)

retired in 1950. Dr. Hutchinson was a life member of the Michigan State Medical Society and a member of the Oakland County Medical Society.

He is survived by his wife, Emma; a daughter, Mrs. Elliott M. Gordon, of Providence, R. I.; a son, F. William Hutchinson; and six grandchildren.

PITT S. WILSON, M.D., of Muskegon, died March 31, 1953, at the age of seventy-four.

Dr. Wilson received his medical degree from the University of Illinois College of Medicine in 1907. After interning at Ziegler, Illinois, he began the practice of medicine in Negaunee as physician and surgeon for the Steel Trust Corporation. He came to Muskegon in 1916.

Dr. Wilson had served as president of the Muskegon County Tuberculosis Association since 1926. He was active in the establishment of the Muskegon County Tuberculosis Sanatorium.

Dr. Wilson was a member of the Muskegon County Medical Society and served as its president in 1926. He was a life member of the Michigan State Medical Society. He had also been Chief of Medicine at Hackley Hospital in Muskegon.

The Muskegon County Medical Society had submitted Dr. Wilson's name to the Michigan State Medical Society as Muskegon's candidate for the title of Michigan's Foremost Family Physician for 1953.

Dr. Wilson is survived by his wife, Una, and a daughter, Mrs. E. LaVerne Johnson, of North Muskegon.

ERNEST A. WITTEWER, M.D., of Bay City, died March 20, 1953, at the age of seventy-seven.

Until his retirement in 1950, he served the community of Bay City for thirty years. Dr. Wittwer was also an attorney. He received his law degree from the Detroit College of Law in 1915. He was graduated from the Saginaw Valley Medical College in 1900.

Dr. Wittwer was born in Switzerland and came to the United States at the age of seventeen. He pursued postgraduate studies at Polytech Clinic in Zurich, Switzerland.

Before coming to Bay City, Dr. Wittwer had practiced in Auburn and Detroit. He was a member of the Bay County Medical Society and a life member of the Michigan State Medical Society.

He is survived by his wife, Anna, and a daughter, Mrs. Henriette Calhoun of Bay City.

* * *

The American Medical Association headquarters office was saddened when employees learned, April 15, that Dr. Raymond Hussey, sixty-nine, scientific director of the AMA Council on Industrial Health, had passed away in St. Luke's hospital, Chicago, following a short illness. He had been associated with the AMA for the last three years, and was widely known among physicians in industry. Before coming to the AMA he served as dean of the School of Occupational Health, Wayne University, Detroit, and, during World War II, he was director of the Army Industrial Hygiene Laboratory, Baltimore. He is survived by a widow and a brother. Burial took place in Baltimore.

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Communications

L. Fernald Foster, M.D., Secretary MSMS
Lansing 15, Michigan
Dear Dr. Foster:

I appreciate, very much, your kind letter of March 12. The small contribution I have made toward cancer control would not have been possible without the confidence and help of my associates.

I have been particularly happy that the State Medical Society has approved and worked with the activities of the American Cancer Society. I have always felt that the physicians should control all the medical activities of this great voluntary health organization.

The public is active in this fight against cancer and it has always seemed to me that a voluntary health organization has the unique opportunity of keeping us out of Socialized Medicine provided doctors control its medical activities.

Sincerely yours,

HARRY M. NELSON, M.D.

April 4, 1953

* * *

Dear Dr. Haughey:

You may recall that last year I spoke about having some Basic Science data published in your journal for the purpose of getting some facts to the medical doctors of Michigan.

The American Association of Basic Science Boards made a two-year survey of failures of all the Boards for

TABLE I.
BASIC SCIENCE EXAMINATION FAILURES BY
STATES — 1950-51

State Board	Candidates	No. Failed	% Failed
1. Iowa	2883	1863	64.6
2. Minnesota	1552	860	55.4
3. Connecticut	166	75	45.3
4. Arizona	195	78	40.0
5. Oregon	377	140	37.2
6. Wisconsin	649	222	34.1
7. Nevada	6	2	33.3
8. Florida	1521	440	28.9
9. South Dakota	190	53	27.9
10. New Mexico	202	51	25.2
11. Washington	522	132	25.1
12. Nebraska	275	66	24.0
13. Texas	255	60	23.5
14. Arkansas	263	56	21.3
15. MICHIGAN	1141	224	19.6
16. Colorado	376	70	18.6
17. Road Island	184	33	17.9
18. Tennessee	424	59	14.0
19. Oklahoma	154	12	7.8
20. Dist. of Columbia	48	3	6.3
Totals	11,383	4499	39.5

This compilation of data from original Board sources shows that Michigan is fifteenth from the TOP in percent of failures. The Michigan percent of failures for the two-year period of 1950-51 is but HALF the NATIONAL AVERAGE.

Presented at the Ninth Annual Meeting of the American Association of Basic Science Boards, February 11, 1952, by Orin E. Madison, President, Michigan Basic Science Board.

TABLE II.
MICHIGAN BASIC SCIENCE EXAMINATION FAILURES BY YEARS AND BY SUBJECTS

Year	No. Candidates	No. Failed	% Failed	% Failures by Subject					
				Anatomy	Bacteriology	Chemistry	Hyg. & P.H.	Path.	Physiology
1940	76	23	30.3	11.8	2.6	6.6	2.6	13.1	14.5
1941	160	26	16.2	9.4	6.3	4.4	6.3	8.7	6.3
1942	245	87	35.6	9.8	10.4	13.8	7.4	11.4	7.4
1943	300	72	24.0	13.0	4.0	11.7	6.7	6.2	8.0
1944	457	147	32.0	12.6	5.7	10.2	6.8	10.0	12.2
1945	403	121	30.0	10.9	3.7	12.0	4.2	9.7	7.7
1946	352	119	33.8	13.1	14.3	11.1	8.5	13.2	9.7
1947	397	121	30.4	19.6	5.8	6.8	8.1	6.5	11.8
1948	451	89	19.6	5.6	3.1	3.7	11.9	2.9	4.6
1949	447	100	22.4	7.1	11.3	4.5	4.0	6.0	6.7
1950	639	131	20.5	10.0	7.5	6.0	6.0	7.3	8.3
1951	502	93	18.5	7.2	7.2	7.4	7.0	5.0	8.8
1952	599	134	22.4	13.9	6.1	9.4	5.5	12.1	9.7

1950 and 1951 as a representative period. Table I enclosed is the result of this survey.

Then our own Board made a study and compilation of our own failures for each subject for each year and for the whole year by years. Table II is the result of this study.

If this information could be published in your State Journal, it would give your profession in Michigan a picture of our own Board and its relation to the other Boards in the country, so any conclusions the members wished to draw could be based on facts instead of rumor or hearsay.

Thanking you for the favor of trying to be of some help to the healing art in Michigan through the release of these data, I am

Most sincerely,

ORIN E. MADISON, President
Michigan State Board of Examiners
in the Basic Sciences

Lansing, Michigan
April 21, 1953

Commissioner A. E. Heustis, M.D.
Michigan Department of Health
Lansing, Michigan

Dear Dr. Heustis:

At its meeting of April 23, the Executive Committee of The Council, Michigan State Medical Society, considered the minutes of the Maternal Health Committee meeting of April 16, specifically Item 3, which is quoted as follows:

"Serology: The Committee considered the latest developments on the regulation regarding serology which appears on page 12 of the Michigan Department of Health Rules and Regulations for Hospitals. The matter was discussed by all present.

"MOTION: That consideration of the mandatory 30-day Kahn thirty days before delivery by this and other Committees of the Michigan State Medical Society are in agreement and it is recommended by this Committee that it be deleted from the Michigan Department of Health Rules and Regulations for Licensing Maternity Hospitals. Carried."

COMMUNICATIONS

The Executive Committee of The Council on April 23 approved the minutes of the Maternal Health Committee's meeting of April 16.

Sincerely,

L. FERNALD FOSTER, M.D.,
Secretary.

May 4, 1953

* * *

Dear Doctor Haughey:

I thought you would be interested in the attached copy of letter received from the Surgeon General's office regarding their news release on the conversion of diathermy equipment.

I judge from the last paragraph of his letter that they are not in position to release any information on the conversion of diathermy equipment.

Yours very truly,

R. A. CRIPE

Vice President

The Burdick Corporation

Milton, Wisconsin
March 30, 1953

DEPARTMENT OF THE ARMY
Office of the Surgeon General
Washington 25, D. C.

18 February 1953

Mr. R. A. Cripe
Vice President
The Burdick Corporation
Milton, Wisconsin

Dear Mr. Cripe:

This is in reply to your letter of January 27, 1953, regarding Army conversion of diathermy equipment.

The Army modification program has been done only on the one model, SWDX-80, built to Federal specifications during the period 1942 to 1946. The type approval certificate furnished the Army by the Federal Communications Commission applies only to units modified by the Army and cannot be issued to other agencies or individuals.

I am very sorry that the last paragraph of our release was in error.

Sincerely,

L. G. ALEXANDER

Lt. Col., MSC

Chief

Technical Liaison Office

CALIFORNIA

A new illustrated booklet is available, describing the hospitals of the California Department of Mental Hygiene and listing the professional opportunities there. Physicians are invited to write for this publication.

California State Personnel Board

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Aversion treatment is not used, nor is restraint employed. Rather, the patient is aided toward rehabilitation through highly coordinated diet therapy, re-education, exercise and pleasant activities in an environment conducive to wholesome normal living—all under careful medical supervision.

The referring physician is kept informed of the patient's progress and receives a summary of the case upon the patient's dismissal.

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NEWS MEDICAL

MICHIGAN STATE MEDICAL SOCIETY ANNUAL SESSION

Pantlind Hotel-Civic Auditorium, Grand Rapids

Wednesday-Thursday-Friday, September 23-24-25, 1953

YOU ARE URGED TO ATTEND!

MICHIGAN AUTHORS

G. L. Waldbott, M.D., of Detroit, Michigan, is the author of an article, "Smoker's Respiratory Syndrome, A Clinical Entity," published in *The Journal of the American Medical Association*, April 18, 1953.

Martin J. Urist, M.D., of South Haven, Mich., is the author of an article, "Bilateral Superior Oblique Paralysis," published in the *American Medical Association Archives of Ophthalmology*, April, 1953.

Alvin R. Lewis, University of Michigan School of Medicine, is the author of an article, "Diabetes Mellitus and Insulin," published in *The Journal of the Student American Medical Association*, April, 1953.

H. Rosenbaum, M.D., and W. S. Reveno, M.D., of Detroit, Michigan, are the authors of an article, "Agranulocytosis and Toxic Hepatitis from Methimazole," published in *The Journal of the American Medical Association*, May 2, 1953.

A. Waite Bohne, M.D., and C. E. Rupe, M.D., of Detroit, Michigan, are the authors of an article, "Hyperchloremic Acidosis; a Study of the Mechanism in Ureterosigmoidostomy," published in *Surgery, Gynecology and Obstetrics*, May, 1953.

* * *

Four Korean medical schools will receive approximately \$7,500 worth of new medical books sent by the United Nations' Korean Reconstruction Agency through CARE.

Part of \$150,000 worth of new text and reference books (exclusive of packing and transportation costs) that CARE is buying and shipping to war-depleted Korean universities for UNKRA, the medical volumes will represent 1,252 titles, the headquarters of CARE, New York City, reports. Ninety per cent are American books, with the balance English, French and German titles. UNKRA is purchasing additional Japanese titles in the medical and other book categories covered by the project, which will cost an over-all total of \$200,000 and provide 50,000 to 60,000 new books.

Medical titles bought by CARE were specifically requested from UNKRA by the recipient institutions: the medical schools of Seoul National, Chun Nam, Kyun Puk and Ewha Women's Universities. First shipment is due to arrive in Pusan in mid-May.

Their arrival will also mark the resumption of service to Korea by the CARE-UNESCO Book Fund, which had been forced to suspend service to that country when hostilities began. Individual contributions in any amount can now be sent to the Book Fund at any CARE office to provide new medical and other scientific books for Korean universities and libraries. Donors may designate the category of book and a specific institution, or may ask CARE to choose the recipient.

* * *

John J. Hanlon, M.D., former professor of public health practice at University of Michigan, has been named director of Technical Co-operation Administration's health and sanitation staff.

* * *

A compilation by the Army Surgeon General's office shows that of the 12,527 physicians coming into the three military services since start of the Korean war, only six have been denied commissions on grounds of questionable loyalty. The ratio for dentists is about the same, three out of 5,409.

Although forty-two physicians and dentists have been inducted as privates during the period, thirty-one were subsequently commissioned or discharged for physical disability. Some of the thirty-one, the Army said, simply waited too long to apply for a commission, and others were misinformed about the facts in their particular cases prior to induction. Several are known to have neglected to ask for a commission in the mistaken belief that they were not physically acceptable. Later, after induction, they qualified under the new lower standards for medical officers.

The tabulation:

Physicians		Air Force	
		Navy	
Total number drafted as enlisted Army men	16	0	8
Commissioned after induction.....	12	0	6
Not commissioned because of loyalty factor.....	4	0	2

* * *

Lewis Cohen, M.D., of Detroit, spoke on "Electromyography; A Diagnostic Adjunct in Neuromuscular

(Continued on Page 672)



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Dependable, accurate mechanism is the same as in the time-proven pocket-model Tycos Aneroid.

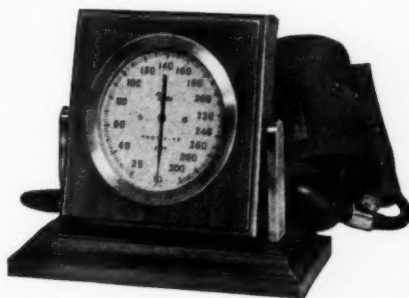
Easy-to-read—bold numerals and graduations on a 3⅜" ivory dial read up to 300 mm. Easel adjustment permits convenient reading angle.

Magnified sensitivity—because the long pointer magnifies slight variations in the pulse wave.

Visual check on accuracy—as long as the pointer returns within the oval zero, the instrument is accurate, backed up by a 10-year warranty.

Exclusive Hook-Cuff fits any size adult arm, goes on and off quickly, easily—an appreciated timesaver.

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JUNE, 1953

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671



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Power for Deep Heating — frequency is controlled by a unique method which permits the full power tube output for heating of both large and small areas by short wave diathermy.

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(Continued from Page 670)

Disorders" to the Medical Division, Detroit Regional Office of Veterans Administration, March 20, 1953; Central Medical Society on April 7, 1953; Wayne County Optometric Society on April 13, 1953.

* * *

A new pamphlet—"A Doctor for your Community"—will be published some time in June by the American Medical Association. This booklet, directed toward communities seeking a physician, describes briefly the problems involved in obtaining a doctor, the things a community can do to attract and keep a doctor, and examples of what has been done elsewhere. A joint project of the Council on Medical Service, Council on Rural Health and Department of Public Relations, the booklet will be available to state medical societies for distribution to communities listed with their placement services.

In addition, the Council on Medical Service has compiled information from numerous state placement services in a reprint which will be especially useful to state societies interested in expanding their activities in this field.

* * *

A complete bibliography of published literature dealing with the medical aspects of civil defense has been compiled by the Council on National Emergency Medical Service. This listing will be available on request from the Council after May 15.

* * *

A newsletter entitled "Parade of Progress," carrying items of interest to rural health leaders, will be instigated late in May by the Council on Rural Health. This news sheet, to be published periodically, will be sent to a special list of state rural health committee chairmen, agricultural extension service personnel and farm organization leaders.

* * *

Hamilton Cameron, M.D., of New York City, has evolved a method of hand symbols by which the paraplegic may communicate his wants and other information. The doctor was suffering from a complete right hemiplegia and aphasia, and to meet his needs devised a system of hand signs which he has had published. The system is available without charge upon request. Address Hamilton Cameron, M.D., 601 West 110th Street, Suite 3LL, New York 25, N. Y.

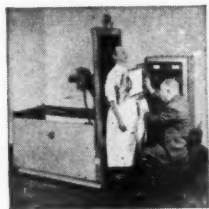
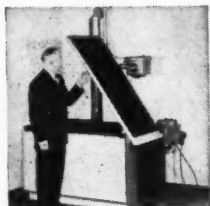
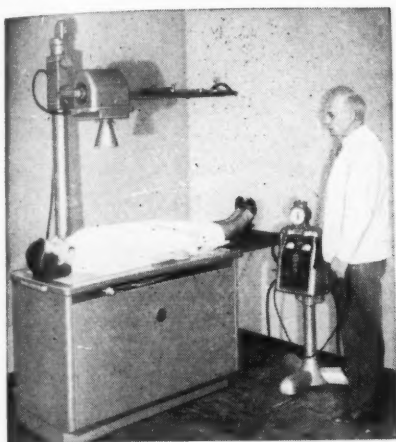
* * *

For the first time in history, hospital births topped the three million mark. The Council on Medical Education and Hospitals' 32nd presentation of hospital statistics reveals that in 1952 there were 3,170,495 hospital births or one live baby born every 9.9 seconds. The report, which appears in the "Hospital Number" of *The Journal of the AMA*, May 9, shows a continued increase in the volume of hospital service in the United States.

Highlights of the report: 6,665 hospitals registered—with 18,914,847 admissions, compared with 18,237,118 the previous year. Bed capacity statistics show an in-

(Continued on Page 674)

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It provides radiography and fluoroscopy in both horizontal and vertical positions with easy change from horizontal fluoroscopy to horizontal radiography, or vice versa, without moving patient from table.

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Available at all pharmacies.

MEYER CHEMICAL COMPANY • DETROIT, MICHIGAN

*T.M.

(Continued from Page 672)

crease of 11,627 over 1951. Average length of stay of individual patients in governmental general hospitals is more than twice as long as in nongovernmental general hospitals—16.4 days as compared with 7.5 days.

* * *

The story of the "Michigan Heart"—one of the outstanding scientific advances of 1952—will be unfolded by F. D. Dodrill, M.D., Detroit, head of the medical engineering team responsible for its development, during the Student American Medical Association's 1953 annual convention. The meeting will be held June 15-17 at Chicago's Edgewater Beach Hotel.

Other convention features include panels on the "doctor draft" and "general practice" . . . sessions of the House of Delegates . . . a large technical exhibit for the first time. Abbott Laboratories of North Chicago will sponsor the traditional opening day party while the American Medical Association will honor new SAMA officers with a reception on the last afternoon.

All physicians residing in or visiting Chicago are cordially invited to attend.

* * *

The U. S. Circuit Court of Appeals, Second Circuit, New York, recently handed down a decision which is of considerable importance to the physician so far as federal income tax is concerned.

For a number of years, the AMA House of Delegates, the Board of Trustees and individual physicians have expressed concern over a ruling of the Commissioner of

Internal Revenue that expenses incurred by a physician in pursuing postgraduate medical education were personal in nature and, therefore, not deductible for income tax purposes.

During the course of the study of this matter it was learned that there was pending before the U. S. Tax Court a case in which a lawyer, named Coughlin, had been denied the right to deduct expenses incurred by him in attending postgraduate courses on taxation. In view of the fact that the issue involved in the lawyer's case was quite similar to the issue in which medicine was interested, the AMA filed in that case a brief as amicus curiae. The Tax Court, however, held against the taxpayer, Coughlin, and an appeal was made to the U. S. Court of Appeals; the AMA again filed a brief.

Oral arguments in the case before the Appellate Court were heard on March 11, 1953. Last week—April 14—the court reversed the decision of the U. S. Tax Court, holding, in effect, that the lawyer could deduct, for federal income tax purposes, the expenses incurred by him in taking a postgraduate course dealing with taxation. An explanatory story of the doctor-implications in the Coughlin case will be prepared for publication in a forthcoming issue of the Journal of the AMA.

* * *

Melvin M. Figley, M.D., of the University of Michigan Medical School, is among twenty-one doctors of medicine appointed as the sixth group of Scholars in Medical Science by the John and Mary R. Markle

(Continued on Page 676)

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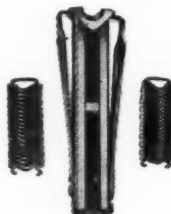
Autoclip technic is the same as used with Michel (Justrite) but because clips are automatically fed to the forceps, speed of application is limited only by the Surgeon's facility.

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The Autoclip Applier is an automatic wound clip applying forceps. Autoclips are automatically spring fed to the applying tip and can be applied as fast as the skin edges can be proximated. Easily taken out with Autoclip Remover.



(Continued from Page 674)

Foundation. Toward the support of these doctors and their research, the Foundation has appropriated \$630,000, to be granted at the rate of \$6,000 annually for five years. Dr. Figley's work will be in clinical radiology: cardiovascular system.

* * *

Wilfrid Haughey, M.D., Battle Creek, will be chairman of next year's Michigan Clinical Institute scheduled for the Sheraton-Cadillac Hotel, March 10-11-12, 1954.

* * *

Wm. J. Burns, Executive Director MSMS, acted as toastmaster at the Wayne University Medical Alumni Banquet, Fort Shelby Hotel, Detroit, on May 13. Mr. Burns also installed the new officers of the Michigan State Pharmaceutical Association at its annual meeting, Pantlind Hotel, Grand Rapids, May 19.

* * *

C. J. Stringer, M.D., Lansing, was appointed by President R. J. Hubbell as MSMS representative to attend the May 15 meeting of the Committee on Study of Nursing Needs in Michigan, a committee of the Michigan League for Nursing.

* * *

G. E. Anthony, M.D., Flint, chairman of the MSMS Child Welfare Committee, was appointed by President R. J. Hubbell to attend the Michigan Welfare League Conference on April 18.

C. C. Sturgis, M.D., Ann Arbor, recently was chosen president-elect of the American College of Physicians. Dr. Sturgis becomes president in April, 1954. Congratulations, Dr. Sturgis!

* * *

John M. Sheldon, M.D., Ann Arbor, was recently chosen president-elect of the American College of Allergists. Congratulations, Dr. Sheldon!

* * *

An Institute on Medical Testimony, for doctors of medicine who do not make that work a special field of endeavor, is being sponsored by the University of Michigan School of Public Health and will be held in Ann Arbor in October, 1953. Every MSMS member will receive an invitation to attend.

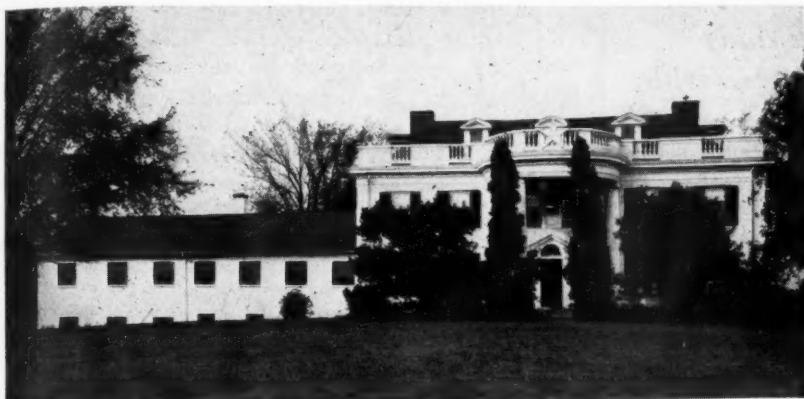
* * *

Officers of the Wayne County Academy of General Practice are: Arthur B. Levant, M.D., Detroit, president; Howard C. Rees, M.D., Detroit, vice president; A. Ray Marsh, M.D., Detroit, treasurer; and Lyle W. Korum, M.D., Detroit, secretary.

* * *

The Menominee Herald Leader of Menominee, Michigan, presented a detailed historical sketch in its March 1 publication of the Beaumont Memorial Restoration at Mackinac Island, as well as a history of Dr. William Beaumont and his pioneering works in physiology of the stomach.

(Continued on Page 678)



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The Michigan Alcoholic Rehabilitation Foundation is a non-profit organization devoted to the proper hospitalization of alcoholics seeking to stop drinking.

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30 days of Nurse at Home.....	5.00 per day	10.00 per day	15.00 per day	20.00 per day
Laboratory Fees in Hospital.....	5.00	10.00	15.00	20.00
Operating Room in Hospital.....	10.00	20.00	30.00	40.00
Anesthetic in Hospital.....	10.00	20.00	30.00	40.00
X-Ray in Hospital.....	10.00	20.00	30.00	40.00
Medicines in Hospital.....	10.00	20.00	30.00	40.00
Ambulance to or from Hospital.....	10.00	20.00	30.00	40.00

COSTS (Quarterly)

Adult	2.50	5.00	7.50	10.00
Child to age 19.....	1.50	3.00	4.50	6.00
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Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting August 3
Surgical Anatomy and Clinical Surgery, two weeks, starting June 15, August 17
Fractures and Traumatic Surgery, two weeks, starting June 15
Esophageal Surgery, one week, starting June 22
Breast and Thyroid Surgery, one week, starting June 22
Gallbladder Surgery, ten hours, starting June 29
Surgery of Colon and Rectum, one week, starting September 21
Basic Principles in General Surgery, two weeks, starting September 21
General Surgery, one week, starting October 5
General Surgery, two weeks, starting October 12
Thoracic Surgery, one week, starting October 12
- GYNECOLOGY**—Intensive Course, two weeks, starting June 15, September 21
Vaginal Approach to Pelvic Surgery, one week, starting August 31
- OBSTETRICS**—Intensive Course, two weeks, starting October 5
- MEDICINE**—Intensive General Course, two weeks, starting September 28
Electrocardiography and Heart Disease, two weeks, starting July 13
Allergy, one month and six months, by appointment
- CYSTOSCOPY**—Ten-day Practical Course starting every two weeks
- UROLOGY**—Intensive Course, two weeks, starting September 28

TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street,
Chicago 12, Illinois

(Continued from Page 676)

In its "Ye Town Crier" column, the *Leader* presented the story in paragraphs entitled "Science, the Memorial, Site, Changes, Remains (of the old Earley House), Shrine, Picture (by Dean Cornwell), and History of the Event."

Congratulations, *Menominee Herald Leader*, on a very complete story of Dr. Beaumont and the Beaumont Memorial, now being erected on Mackinac Island through the contributions of members of the Michigan State Medical Society!

* * *

C. Paul Hodgkinson, M.D., Detroit, has been elected secretary of the American Academy of Obstetrics and Gynecology. Congratulations, Dr. Hodgkinson!

* * *

Harrison S. Collisi, M.D., recently of Erie, Pennsylvania, has been named manager of Veterans Administration Tuberculosis Hospital at Livermore, California. Dr. Collisi practiced medicine in Grand Rapids, Michigan, for thirty years. After service in World War II, Dr. Collisi was appointed Chief of the General Medical Division of VA office in Columbus, Ohio; for four years to November, 1950, he was manager of the VA Hospital in Cleveland, after which he moved to the new VA Hospital in Erie, serving to the present date.

* * *

The National Fund for Medical Education may be granted a national charter. A bill (S. 1748) was introduced into the Senate on May 5 by Senator Robert A. Taft. Through this proposed legislation, the National Fund would be on the same footing as the American Red Cross and a few other agencies who enjoy the prestige of a Congressional Charter.

President Eisenhower recently stated—in a recent letter to S. Sloan Colt, president of the National Fund for Medical Education—that the financial crisis facing the nation's seventy-nine medical schools "poses a dangerous threat to our national welfare." President Eisenhower urged the support of the medical profession in industry.

* * *

Raymond Hussey, M.D., former Dean of the School of Occupational Health, Wayne University, Detroit, died on April 15 in Chicago. For the past three years, Dr. Hussey was Scientific Director of the AMA Council on Industrial Health. During World War II, Dr. Hussey was Director of the Army Industrial Hygiene Laboratories at Baltimore. He is survived by a widow and a brother. Burial took place in Baltimore.

* * *

The National Gastroenterological Association announces that its Fifth Annual Course in Postgraduate Gastroenterology will be given at the Hotel Biltmore in Los Angeles, California, on October 15, 16, 17, 1953.

The course will again be under the direction and co-chairmanship of Dr. Owen H. Wangenstein, Professor of Surgery of the University of Minnesota Medical School, who will serve as surgical co-ordinator and Dr.

(Continued on Page 680)

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Isidore Snapper, Director of Medical Education, Cook County Hospital, Chicago, Illinois, who will serve as medical co-ordinator.

For further information and enrollment, write to the National Gastroenterological Association, Department GSJ, 1819 Broadway, New York 23, N. Y.

* * *

William John Stapleton, Jr., M.D., of Detroit, emeritus professor of Jurisprudence, Ethics and Economics and Medical History at the Wayne University College of Medicine, was honored at the Wayne University Alumni Reunion held Saturday, May 9, in Detroit, when he was presented an Alumni Award for outstanding service and achievement by Dr. Clarence B. Hilberry, acting president of Wayne University, during the eighty-fifth anniversary of the founding of Wayne.

Dr. Stapleton received his Ph.D. degree in 1902 from the Detroit College of Medicine, parent institution of Wayne's College of Medicine. His other degrees include the M.D. from the Michigan College of Medicine in 1900 and the LL.B. from the Detroit College of Law in 1907.

He is still actively engaged in medical practice and conducts "By the Way" column for the *Detroit Medical News*, in addition to editing the series "100 Books for the Doctor" also appearing in the *Medical News*.

Dr. Stapleton has made many contributions to his

field. He was associate dean of Wayne's College of Medicine for ten years and acting dean for two years. He has worked in the field of medical jurisprudence and legal medicine since 1907.

His Wayne alumni service includes that of historian of the Wayne University College of Medicine Alumni Association and membership on the Board of Trustees, Wayne University Medical Library Fund, Inc.

He is a member of numerous professional societies and fraternities.

* * *

Practical Nurse Training Program Studied.—A comprehensive study of the Practical Nurse Training Program has been announced by Dr. Lee M. Thurston, State Superintendent of Public Instruction. The study, suggested by the State Advisory Committee for Practical Nurse Education, is the result of co-operation among the W. K. Kellogg Foundation, the University of Chicago, and the Michigan Department of Public Instruction, as well as other individuals and agencies.

Goals for the project include the determination of strengths and weaknesses, the development of suggestions for program improvement, the organization of criteria for evaluation on a continuing basis, and the provision of a basis for studying programs in other states. Findings of the study, as well as the evaluation techniques, will be made available to other states which have similar programs.

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Professional and practical nurses, physicians, educators, hospitals, public health nursing agencies, convalescent homes, and related organizations will all participate in this evaluation which will continue through June 30, 1953.

The study will confine itself to the operation of the Michigan Practical Nurse Training Program during the last five years. Schools of practical nurse training in eight communities will be involved. These include Ann Arbor, Battle Creek, Detroit, Flint, Grand Rapids, Lansing, Marquette, and Traverse City.

* * *

Hearing in Osteopathic Case.—The Supreme Court of Appeals docketed for hearing on Tuesday, April 28, the osteopathic case appealed from the Circuit Court of Wyoming County (W. Va.). Briefs were heard at that time.

The proceeding was instituted by the members of the Medical Licensing Board and a group of Wyoming County physicians who contend that an osteopathic physician is practicing medicine and surgery in that county in violation of the law.

The suit was instituted following an opinion of the Attorney General, handed down in 1951, in which it was held that osteopathic physicians and surgeons, under the laws of West Virginia, are entitled to the same rights and privileges in the treatment of cases "only to the extent that their treatment remains within the field of osteopathy."

In October, 1952, an opinion was handed down by

the judge of the Wyoming County circuit court to the effect that medical doctors and osteopathic physicians are in two separate and distinct professions and that osteopathic physicians have the same rights in the practice of osteopathy as physicians and surgeons have in the practice of their profession.

The case was appealed to the Supreme Court of Appeals and briefs filed in December, 1952.—*West Virginia Medical Journal*, May 1953.

* * *

Kenneth B. Babcock, M.D., Detroit, Director of Grace Hospital, was named to serve on the national Blue Cross Commission as one of the three representatives of the American Hospital Association, at the Blue Cross Conference held at Hollywood, Florida, April 16.

* * *

"Careers for Maturing Workers" is the theme of the University of Michigan Sixth Annual Conference on Aging to be held in Ann Arbor, July 8-10, 1953.

The problems associated with earning in the later years and with methods for creating new opportunities for remunerative activity by aging people are particularly pressing at this time because of the steadily increasing number of older workers cut off from earning opportunities.

Discussion sections led by nationally known experts will consider, among other facets of the problem: The maturing worker from the standpoint of health; counseling, guidance, placement and training of the maturing worker; continuing employment in business and indus-

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Offers to the elderly and chronically ill

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try; development of new opportunities in all fields of work; needed action by business, industry, unions, communities.

Exhibits and demonstrations of marketable skills will be a feature of the Conference.

For further information about the program, write to: Dr. Wilma Donahue, Chairman, 1510 Rackham Building, Ann Arbor, Michigan.

* * *

The Orthopedic Frame Company, of Kalamazoo, is sponsor of a new scholarship in industrial arts at Western Michigan College, according to Harry Treace, general manager of the Company. Homer H. Stryker, M.D., Kalamazoo, is president of the Orthopedic Frame Company.

Graduating seniors from all Michigan high schools will be eligible to compete in the scholarship which will first be awarded to an entering freshman in the fall of 1953. The scholarship has a value of \$500.

* * *

The thirty-first annual clinical session of the American Congress of Physical Medicine and Rehabilitation will be held on August 31, September 1, 2, 3 and 4, 1953, inclusive, at the Palmer House, Chicago, Illinois.

In addition to scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association.

Full information may be obtained by writing to the executive offices, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

* * *

Michigan Doctors of Medicine who attended the American Academy of General Practice Assembly in St. Louis, Missouri, March 23-26, 1953, are:

Arnold O. Abraham, M.D., Hudson; Herbert C. Allison, M.D., Grosse Pointe; Robyn J. Arrington, M.D., Detroit.

Charles W. Balser, M.D., Detroit; S. A. Beckwith, M.D., Stockbridge; W. R. Birk, M.D., Hastings; Arthur Boddie, M.D., Detroit; H. C. Bodmer, M.D., Kalamazoo; Charles W. Brooks, M.D., Detroit; Wm. W. Bruce, M.D., Swartz Creek; Lawrence H. Butler, M.D., Detroit.

Hector M. Chabut, M.D., Jackson; Henry G. Chall, M.D., Detroit; Horace R. Cobb, M.D., Kalamazoo; McClellan B. Conover, M.D., Flint; C. A. Cooper, M.D., Stambaugh; Schuyler O. Cotton, M.D., Detroit.

Luther W. Day, M.D., Jonesville; J. S. DeTar, M.D., Milan; Harold Drinkhaus, M.D., Detroit.

Arvid W. Erickson, M.D., Ishpeming. G. R. Fattic, Jr., M.D., Niles; Edwin H. Fenton, M.D., Detroit; Russell F. Fenton, M.D., Detroit; M. J. Franjac, M.D., Detroit.

P. C. Gittins, M.D., Detroit; Lolita Goodhue, M.D., Kalamazoo; John B. Greene, M.D., Detroit.

Harold H. Harris, M.D., Detroit; Wm. H. Harrison, M.D., Lansing; G. Lee Hileman, M.D., Encorse; W. E. Hoffer, M.D., Charlotte; Clare C. Huggett, M.D., Lansing.

E. B. Johnson, M.D., Allegan. Morris Kazdan, M.D., Allen Park; S. N. Kelso, Jr., M.D., Monroe; G. L. Kemme, M.D., Zeeland; Howard J. Kerr, M.D., Muskegon; John H. Kitchel, M.D., Grand Haven; F. S. Kucmierz, M.D., Detroit.

Ruth E. Lalime, M.D., Bear Lake; N. E. Lanning,

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Augusta Marchler, M.D., Detroit; L. L. Marston, M.D., Lakeview; Kenneth M. McColl, M.D., Grosse Pte. Woods; A. J. McGregor, M.D., Brighton; H. L. Morris, M.D., Novi; Edward C. Mosier, M.D., Otisville. John Norup, M.D., Berkley.

Earl E. Parker, M.D., Leslie; Harry Jay Prall, M.D., Lansing.

Russell Ragan, M.D., Flint; H. C. Rees, M.D., Detroit; Wm. F. Reus, M.D., Grand Rapids; F. P. Rhoades, M.D., Detroit; C. J. Richards, M.D., Durand; Howard Robinson, M.D., Detroit; Donald G. Ross, M.D., Grosse Pointe; Hyman Ross, M.D., Detroit.

G. E. Sands, M.D., Detroit; R. H. Schaftenaar, M.D., Holland; Clare A. Scheurer, M.D., Pigeon; John H. Schlemer, M.D., Detroit; R. E. Sculley, M.D., Grand Rapids; Geo. W. Sippola, M.D., Detroit; Milton E. Slagh, M.D., Saranac; A. V. Smith, M.D., Mason; Maurice J. Smith, M.D., Flint; A. C. Stander, M.D., Saginaw; H. D. Stricker, M.D., Detroit; Karl L. Swift, M.D., Detroit.

Thomas A. Tenaglia, M.D., Detroit; Elmer C. Texter, M.D., Detroit; Hugh O. Thompson, M.D., Detroit.

J. Van Dellen, M.D., East Jordan. Arch Walls, M.D., Detroit; David Reinfred Wark, M.D., Flint; K. N. Wells, M.D., Spring Lake; Wm. G. Winter, M.D., Holland.

J. P. Yegge, M.D., Kent City.

* * *

Postgraduate Course in Hematologic Diagnosis.—A course in hematologic diagnosis for graduate physicians will be given at the Michael Reese Hospital by Karl Singer, M.D., Director, Department of Hematologic Research, Medical Institute, July 20 to August 1, 1953,

full time. The course gives a review of the present trends in hematology as well as instruction in actual reading of slides, normal and pathologic specimens, peripheral blood and bone marrow. An individual slide collection is provided and may be retained by the participants. A demonstration of all immuno-hematologic as well as of the modern tests for disturbances of the clotting mechanisms is scheduled.

Further information and a copy of the curriculum may be obtained from the Department of Hematologic Research, Medical Research Institute, Michael Reese Hospital, Chicago, Illinois.

* * *

Russ V. Oosting of the Medical Arts Surgical Supply Company, Grand Rapids, is president of the Michigan State Pharmaceutical Association. Mr. Oosting has been a long-time exhibitor at annual sessions of the Michigan State Medical Society and has a host of medical friends throughout this state.

Congratulations, Russ, and sincere wishes for a successful presidential year!

* * *

Gariety Sponsors Cancer Trip.—Twenty-five Michigan men, including nine Doctors of Medicine from Lansing, Flint, Saginaw, Bay City, Jackson, Battle Creek, and Detroit, visited the Memorial Center for Cancer and Allied Diseases in New York City as the guest of James A. Gariety, Jr., president of the Gariety-Michigan Corporation, of Adrian.

The trip to New York City on April 23 was arranged by Mr. Gariety to allow the Michigan men to view the

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latest advances in cancer diagnosis, treatment, palliation, cure, prevention and research. The laymen had been, or are presently, associated with lay cancer work in their respective communities. The M.D.s long have been identified with cancer treatment.



More than one-third of the patients discharged to their homes from Michigan tuberculosis hospitals and sanatoriums are patients leaving against medical advice—most of them with their disease uncontrolled. These patients not only endanger their own lives, they are a possible source of tuberculosis infection in their homes and communities—a contributing factor in the continuing high tuberculosis case load.

In this complex problem there is a challenge and responsibility for the general medical practitioner as well as for the tuberculosis specialist, the public health worker and the social worker.

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(Continued from Page 617)

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Acknowledgment of all books received will be made in this column, and this will be deemed by us as full compensation to those sending them. A selection will be made for review, as expedient.

A FORTY-YEAR CAMPAIGN AGAINST TUBERCULOSIS. By Louis I. Dublin, Ph.D., Second Vice President and Statistician. New York: Metropolitan Life Insurance Co., 1952.

This monograph traces the campaign against tuberculosis over the past forty years and chronicles the part played by the Metropolitan Life Insurance Company in the battle against this disease. An excellent bibliography is appended. The monograph is primarily of interest from the public health standpoint.

R.W.B.

TREATMENT OF MENTAL DISORDER. By Leo Alexander, M.D. Director, The Neurobiological Unit, Division of Psychiatric Research, Boston State Hospital, and Instructor in Psychiatry, Tufts Medical School. Illustrated. Philadelphia: W. B. Saunders Co., 1953. Price, \$10.00.

This textbook has been written, apparently, on the author's theory that there should be less rigidity in the classification of patients and their illness. He believes that the important criteria is where the patient stands in the battle against his disease and what sort of help he needs. He bases the need for electro-shock therapy on the findings of the Funkenstein test. His entire theory

of mental illness is that it is a psychosomatic disturbance of the nervous system.

This therapy includes the entire gamut of various treatments that are in current use. In collaboration with several equipment companies there are several chapters on electrical currents, techniques and neurophysical aspects of physical treatment. Chemical, hormonal and psychotherapy are covered with indications and directions for use.

All necessary material has been included in this book, and is well presented. The only criticism that appears warranted is that some of this material seems a little hard to find, but if one searches it is all there. It is a worthwhile book.

G.K.S.

SYNOPSIS OF PATHOLOGY. By W. A. D. Anderson, M.A., M.D., F.A.C.P., Professor of Pathology, Marquette University School of Medicine; Pathologist, St. Joseph's Hospital, Milwaukee, Wisconsin. With 334 text illustrations and 13 color plates. Third Edition. St. Louis: The C. V. Mosby Co., 1952. Price \$8.00.

This volume is a true synopsis in the sense that important topics are often summed up in a few sentences. Apparently, however, the author omits very little that is important in contemporary pathology, and the book should be recommended to those physicians preparing for various types of examination in other fields who wish to review the subject.

The bibliography following the various chapters is current and exhaustive, enabling one to employ this as



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a source book and expand the abbreviated topic. The portion devoted to Gynecology and Ovarian Tumors is particularly good. The discussion on Viral and Rickettsial diseases is also outstanding and is presented in a more detailed form than most of the material in the book.

If the prospective purchaser expects more than a synopsis, he should be assured that it is just that, and nothing further. If he wishes a more extensive review of pathology, the very excellent large volume edited by the same author is highly recommended.

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OPERATIVE GYNECOLOGY. By Richard W. Te Linde, Professor of Gynecology, Johns Hopkins University, and Chief Gynecologist, Johns Hopkins Hospital. 409 figures and 7 color plates. Second Edition. Philadelphia: J. B. Lippincott Co., 1953. Price \$20.00.

This is the most complete work on the subject of operative gynecology we have had the pleasure to own. It is written primarily for the resident who intends to specialize in gynecology. The subject matter is extremely well presented, and treatment of the conditions reviewed is definitive. There are sections on the branches of abdominal surgery and urological conditions that the gynecologist might be required to treat. Many phases of office practice are emphasized in this work. Many of the conditions described have never previously been so adequately considered. We feel this is a text that everyone doing operative gynecology will be pleased to own.

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